



Development and Implementation of a Management Reform Plan for the District of Columbia

FIRE AND EMERGENCY MEDICAL SERVICES DEPARTMENT

Task 1 Problem Identification

 **TriData Corporation**

and

Arthur Andersen LLP

October 7, 1997



**Development and
Implementation of a
Management Reform Plan
for the
District of Columbia**

**FIRE AND EMERGENCY
MEDICAL SERVICES
DEPARTMENT**

**Task 1
Problem Identification**

to

**Dr. Andrew Brimmer
District of Columbia
Financial Responsibility
and Management
Assistance Authority
One Thomas Circle
Washington, D.C. 20005**

by

**TriData Corporation
1000 Wilson Boulevard
Arlington, Virginia 22209**

and

**Arthur Andersen LLP
1150 17th Street, N.W.
Suite 901
Washington, D.C. 20036**

October 7, 1997

CONTENTS

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

i

CHAPTER 1 – INTRODUCTION

1-1

Scope

1-1

Methodology

1-2

Inter-Departmental Connections

1-2

Organization of the Report

1-4

CHAPTER 2 – OFFICE OF THE FIRE CHIEF

2-1

Overall Organization

2-1

Rules and Regulations Book

2-2

Accountability

2-2

DPM/EEO/ADA/OPM Functions

2-4

Public Information Office

2-7

Office of Judicial Affairs

2-7

Office of the Chief Financial Officer

2-7

Office of the Administrator

2-12

Community Relations

2-13

CHAPTER 3 – PREVENTION

3-1

Public Fire Education

3-3

Code Enforcement/Fire Inspections

3-4

Plans Review

3-8

Fire and Arson Investigation

3-10

CHAPTER 4 – EMERGENCY MEDICAL SERVICES

EMS Benchmarks

4-3

EMS Bureau Personnel

4-6

Resource Deployment

4-7

Medic 17

4-9

Engine Company First Response

4-10

Major Problem With EMS

4-10

Other Problems With EMS

4-28

Quick Fixes

4-40

CHAPTER 5 – FIREFIGHTING

5-1

Organization

5-1

Response Assignment

5-1

Staffing

5-3

Apparatus

5-7

Response Times

5-12

Personal Protective Equipment (PPE)	5-15
Personnel Hiring	5-16
Supervision	5-16
Mutual Aid	5-17
CHAPTER 6 – SPECIAL OPERATIONS	6-1
Apparatus	6-2
Equipment	6-3
Staffing	6-5
Training in Special Operations	6-7
Special Operations Companies	6-9
Fireboats	6-13
Foam Units	6-17
Metro and Rail Operations	6-17
CHAPTER 7 – TRAINING	7-1
Staffing	7-2
Training Facilities	7-3
Training Equipment and Apparatus	7-6
Training Curriculum	7-6
CHAPTER 8 – COMMUNICATIONS	8-1
Organization	8-1
Budget	8-2
Personnel, Operations and Physical Plant	8-2
Equipment/Technology	8-3
Communications Training	8-6
Intra-Department Communications	8-7
Other Comments	8-8
CHAPTER 9 – SERVICES	9-1
Management Information Services (Information Technology)	9-1
Personnel Liaison	9-6
Property and Supply	9-7
Research and Development	9-10
Professional Standards	9-12
Fleet Maintenance	9-15
Compliance	9-19

ACKNOWLEDGMENTS

The authors would like to thank all of the men and women of the D.C. Fire and Emergency Medical Services Department for their outstanding cooperation throughout Task 1 of this study. We have worked with fire departments all over North America, and have never received better cooperation.

Special thanks go to Chief Edwards and his senior staff for facilitating the many meetings throughout the Department, their tolerance of many questions, and their openness.

We would also like to give special thanks to the organizations representing employees in the Department and the many individual members with whom we visited in the stations, in the field, and elsewhere. Finally, we wish to thank the District of Columbia Financial Responsibility and Management Assistance Authority for their leadership and guidance throughout this study, and the opportunity given to us to assist.

Though we were given much assistance, the evaluation here is the responsibility of the authors.

TriData and Arthur Andersen used extensive teams of consultants to address the many services of the Fire and Emergency Medical Services Department. Key members of the teams were as follows:

TriData

Philip Schaenman, Overall Project Manager
Erik Gaull, EMS Team Leader
Charles Jennings, Fire Operations Team Leader
Oscar Brennan
Reade Bush
Ward Caddington
Charlene Cullen

Timothy Kiehl

Stanley Poole

William Richmond

Jeffrey Stern

Myra Socher

Stanley Poole

Arthur Andersen

Jeff Winbourne, Team Leader

Bob Binkley

Anthony Gardiner

Horace McCormack

Sheila Wright

EXECUTIVE SUMMARY

TriData Corporation and its subcontractor, Arthur Andersen, have undertaken a rapid but comprehensive review of the D.C. Fire and Emergency Medical Services Department (DCFEMS). This report describes the findings of Task 1 – identifying the problems requiring management reforms. We have identified a rather long list of areas requiring management reform. Task 2 – identifying the reforms needed, and Task 3 – developing an implementation plan, will be undertaken in October and November 1997.

Because of the limited time, we have tried to be selective and focus most on issues we consider of greater importance rather than the myriad problems one can find in a large, complex organization. This Executive Summary lists the highest priority problems. A few areas require further analysis before one can say whether they require reform – those that could not be reviewed in the three weeks available for the initial review.

Methodology

Study team personnel met with the head of every major functional area of the Fire and Emergency Medical Services Department. We also met with employee organizations and with many of the rank and file members of the department. Team members rode with or observed operations of some units. We requested and reviewed much data. There was, of course, no time in this period to develop or run any computer models of the department's deployment or do any in-depth analysis. But we believe most of the major problem areas were identified.

Overview

The D.C. Fire and Emergency Services Department has the awesome responsibility of protecting not only the citizens of the District of Columbia, but also the government of the United States and millions of visitors. Although this type of study, by its very nature, tends to focus on negatives, the many fine achievements of the men and

women of the Fire and Emergency Services Department and the progress being made under its current leadership should not be overlooked. Much progress started prior to this study.

Overall, the DCFEMS delivers a range of emergency services similar to comparable cities and entirely appropriate for its community. Service levels for firefighting services appear to be nominally in line with national practice, while emergency medical service response times are much longer than national standards.

There are serious shortcomings in the prevention and planning functions, which have aggravated the fire and EMS problems over the long term. There is little targeted activity to reduce the fire problem and little or no capacity or analysis undertaken for understanding its unique problems and their causes. The Department finds itself in a reactive mode, moving from crisis to crisis, with major opportunities for improvement and correction missed due to a mixture of the lack of a planning staff (until recently), political micromanagement, and barriers posed by the DC procurement and personnel rules.

The appointment of a new Chief and the initiation of this study offer an historic opportunity to direct the organization towards a future of enhanced service and responsiveness to community needs. There are many areas for improvement and many problems, which if taken in isolation, would constitute crises in and of themselves.

Fire Department morale is generally poor due to continued reduction in resources over the years, negative media reports, perceptions of undercompensation, and some incredibly bureaucratic procurement policies and constraints that have affected the ability to maintain the emergency forces, and hamstrung the leadership's ability to manage.

Fire Department Organization and Management

- The D.C. Fire Chief is hamstrung from making normal management decisions by the current constraints on his authority, from procurement, to budget, to

deployment of resources. For example, any change to the Fire Department *Rules and Regulations* manual must be approved by the D.C. Council.

- Firefighters have access to computers for filing fire incident reports, but not for many other functions. A more completely integrated computer network is needed within the fire department.
- There is confusion about the development of budgets and the allocation and management of appropriated funds, including budgeting for overtime and budgeting for adequate staffing for each position. Managers are not given complete budgets for their areas of responsibility. Widespread use of firefighters to fill-in for positions outside firefighting distort the budget picture.
- Strengthening and clarification of mutual aid agreements with neighboring jurisdictions are needed.

Fire Prevention

- The District of Columbia has a fire death rate averaging about 60 percent higher than the national fire death rate per capita in the last four years (30 deaths per million versus 19 nationally). It has one of the higher per capita fire death rates among American cities.
- The Fire Prevention Bureau reports to the Assistant Chief for Operations, an unusual organizational placement as compared to other cities. Many departments have elevated prevention to the level of suppression and support services.
- The unit is significantly understaffed, and has been trending downward on services provided, with no one raising alarm signals about this impact.
- There is no systematic program to reach the school children and the elderly of D.C. with fire safety information. The current program only reacts to requests from the schools or community groups. Though the department does not know what percent of children and elderly are reached annually, it is clear that

the majority of children and elderly do not get regular, let alone annual, messages. There is only one public fire educator for a city of over 500,000 population (Atlanta has five).

- There is no juvenile fire-setter counseling program in place, though juveniles setting fires has been known to be a key fire problem of long standing.
- The recommendations from a previous U.S. Fire Administration study of arson unit management in D.C. were not implemented. There is inadequate support by the police in arson investigation, and arson investigators do not have peace officer powers to provide an alternative. The result is an extremely low clearance rate for arson.
- The courts have given the fire department the job of inspecting repairs to schools, though the department personnel have no training to do this, and have a major shortfall in fire inspection.
- Unqualified personnel are reviewing plans for complex fire protection systems in new buildings. There are no fire protection engineers. (Prince George's County has nine.)
- There are delays in turning around building reviews, which result in complaints from the construction community.

Emergency Medical Services

- Over three-quarters of the responses of the Fire Department are for emergency medical service calls. Average response times for Advanced Life Support (paramedics) are highly unsatisfactory. EMS medical care varies in quality.
- Unit Hour Utilization factors (the percent of time units are busy) are far above national norms, a factor in the high response times and in paramedic burnout.
- The first responder program gets engine companies to medical calls much faster than possible with EMS ambulances alone. However, further improvement is needed: fire company response times for EMS calls are 1-2 minutes higher than for fire calls, even after the longer time to triage and

dispatch EMS calls is taken into account. There was no ready physical or operational explanation for the difference.

- EMS personnel and cross-trained firefighters are two cultures at odds with each other. Although they share facilities and work side by side, they have different work schedules, accountability practices, overtime arrangements, performance standards, and dual chains of command, which leads to friction.
- Quality assurance needs to be improved.
- Key supplies – e.g., fuel, oxygen – are poorly distributed, leading to unnecessary time out of service for ambulances.

Firefighting Operations

- There are no reserve ladder trucks – zero. There are very few reserve pumpers, and in such bad condition that they are not to be counted upon. National standards call for a reserve fleet of at least one to two vehicles for every eight in the primary fleet. Whenever a ladder truck is taken out of service for repairs, there is a hole in the City's protection.
- There is a major problem with inefficiently repairing fire apparatus. The procurement bureaucracy and multiple approvals required to get even small repairs to brakes or springs puts vehicles out of service for weeks, a month, or even a year. There are many repair horror stories. Emergency purchasing authority went into effect only in June 1997. The lack of reserve vehicles and the procurement delay for emergency repairs are two red flag situations. (Legislation passing Congressional committee this past month may provide a partial solution, but the impacts of the past will be felt for a while.)
- Several internal fire department studies that considered re-deploying resources to fill holes and smooth out response times have been stymied, in part because of mistrust of the data. Some of the moves appear to make good sense. A further examination of deployment is needed beyond this three-month study. It is a complex analytical issue.

- The response time data critical for assessing service effectiveness, determining inequities between particular neighborhoods and for overall deployment appears to be inaccurate. It suffers from a common problem found nationwide – the lack of consistent reporting by radio of when a unit arrives on the scene. This is compounded by frequent delays in the posting of the on-scene information by the dispatchers. The fire apparatus does not have the (long existing) technology that permits pushing a button on the dashboard upon arrival at the scene to automatically register the arrival time in the computer.

Communication Technology

There are major holes (areas) in the city where the communication system does not work well.

- The computerized dispatch system is out-of-date and inadequate for the current expanded mission of the department.
- There are major “inter-operability” problems – the ability to communicate with the adjacent departments, which already are on modern 800 MHz systems for a decade. The District has been planning a modern 800 MHz system, since the early 1980s, but has been thwarted by its own procurement delays. This has had a ripple effect, requiring renewal by the FCC of frequencies that had been approved for use.
- There are major problems with firefighting forces being able to communicate from the Metro system station tunnels and from deep within federal buildings.
- Training and management of police 9-1-1 communication personnel are deficient in many ways for their support of fire and EMS operation. Even the way they answer the phone – “Police Emergency” – promotes confusion and delay for citizens reporting fires and EMS needs.
- The prevention and suppression units need in-vehicle data communications technology.

Personnel Issues

- **Accountability** – All ranks complained about a lack of adequate accountability of personnel. Officers and chiefs as well as firefighters need to be held accountable. There is a lack of adequate accountability for attendance, meeting the dress code, and even for acute safety problems such as dangerous driving.
- **Disability Retirements** – Due to restrictive language in the (Congressional) budget authorization for D.C., the police and fire departments together effectively have been restricted to retiring on disability a total of only nine people hired before 1970 each year, regardless of the numbers injured. This results in the Fire Department having to carry about 36 people on permanent, full-time injury status, and to replace them with overtime. This in turn is a major contributor to the high overtime usage, and unfairly reflects on the department. (The problem may have been solved by a rule change by Congress within the last few weeks.)
- **Personal Safety** – There is no comprehensive risk management program for hazards to personnel, and many dangers from lack of equipment and poorly maintained equipment. There is much liability exposure. One example: The compressed air tanks used in SCBAs are not regularly tested, in violation of OSHA regulations and DOT Standards. About 75 percent of the tanks are not up to date in testing.
- **Position Descriptions** – Position descriptions are out of date: CPO will not update them. The lack of adequate requirements in position descriptions, and other hiring practices has led to hiring mechanics who cannot maintain modern fire apparatus satisfactorily, a critical problem.
- **EEO** – Overall, the department is quite representative of the resident population it protects, much closer than most big city fire departments (65 percent minority versus 67.5 percent minority in the population). However there needs to be further attention to conflict resolution and diversity training, and further attention to reducing perceptions of unfairness. Also, about 85 percent of those passing the

last promotion exam for officers (Sergeant through Captain) were not minority, foreshadowing potential imbalances in representativeness in the future.

Special Operations

The Fire Department has recently (in August) consolidated many key specialized services under a Special Operations Battalion Chief, who reports to the Assistant Chief for Operations. This excellent move will enhance the ability to deal with rescues, hazardous materials incidents, and terrorism. However, some major problems exist:

- Poor conditions and no backup units for rescue units and special vehicles.
- Much vehicle extrication equipment and other specialized equipment is in poor repair or at the end of its useful life.
- Unit personnel have been paying for repairs out of their own pocket.
- No budget for the unit; it survives on grants.
- Key personnel are on temporary detail to special operations; to help coordinate the functions, permanent staff is needed.
- There is a lack of large transport vehicles needed to bring heavy equipment such as lumber and shoring materials to a cave-in, and to bring supplies to rescues, affecting the ability to respond and maintain heavy rescue operations.
- There are too few specialized HazMat protective suits (only 6; at least 12 are needed).

Property and Supply

- The procurement, storage and distribution of supplies is deplorable. Lack of key supplies hampers delivery of services and affects the morale and dignity of the personnel.
 - Medic units run out of oxygen and fuel

- Toilet paper and vehicle cleaning supplies often have to be purchased by firefighters out of their own pockets
- There is no dedicated property officer, no property management program, no supply chief, poor storage facilities for supplies, no central inventory system and no accountability for property.
- There is little to no security in supply storage facilities. Theft is a concern. Since there is no formal inventory system, no one knows the extent of the theft.

Station Maintenance

- Many stations are in disrepair. Examples: Portable heaters used all winter. Leaking roofs. Lack of adequate provisions for female firefighters.

Training

- The Training Academy is in deplorable condition – literally a junkyard. The Department needs a new facility with live burn simulation capabilities.
- EMS and fire training have recently been combined under the Training Division. The training culture needs to change with it.
- There is inadequate equipment and apparatus for training recruits. The stations “borrow” training equipment to fill their needs.

CHAPTER 1 – INTRODUCTION

TriData and its subcontractor, Arthur Andersen LLP, were selected by the DC Financial Responsibility and Management Assistance Authority to undertake a three-task study of the DC Fire and Emergency Services Department. This report summarizes the result of Task 1 - Problem Identification.

Before this study started, the D.C. Fire and Emergency Medical Services Department was already in the process of undergoing change. The new Chief, promoted from within, has been moving the department in the right direction on many fronts. There are many new people in senior positions and they generally seem to be well aware of the problems in their units. These problems were caused by a variety of factors over the years, not the least of which was a lack of funds to purchase the technology needed for a modern department. In addition, severe procurement barriers and rules constrictions inhibited the sound and efficient use of the funds that were available.

Despite the many good intentions and plans to correct problems, our focus has been on what the state of the department currently is, not what it is projected to be. We will take the plans into account in formulating management reforms and implementation plans in Tasks 2 and 3.

Scope

This study included all services and functions of the Department, including firefighting, emergency medical services, and special operations (rescue and hazardous materials, counter terrorism and fireboat). It includes communications, training, maintenance and various support and administrative services. It excludes a complete deployment analysis, which is not clearly necessary nor possible within the time constraints of this study.

Methodology

Task 1 of this study was allocated approximately three weeks of calendar time in which to be completed. TriData used a broad team of specialists in different aspects of fire and emergency medical services, so that the different aspects of the Department could be reviewed in parallel. To avoid individual bias, most areas of the Department were reviewed by at least two members of the project team.

The Fire and EMS Department was extremely responsive in providing a large amount of data in a short time. The Department provided complete access to its personnel at all levels and greatly facilitated the effort.

In the course of this task, the team met with virtually all of the division chiefs and higher ranks, as well as the Authority. Many rank and file members of the Department were visited in the stations and contacted through various employee groups, including the unions representing firefighters, medics, and communications workers and the local chapter of the International Association of Black Professional Firefighters. TriData staff also observed the communications center, and rode with various operations units, especially EMS units. There were no large fires that we know of during this period, although the staff was able to attend one fire and observe operations on several other emergency incidents.

Ideas for addressing many of the problems raised here have begun to be formulated but only the problems are described in this initial Task 1 report.

Inter-Departmental Connections

The Fire Department is heavily dependent upon the cooperation and the effectiveness of many other departments. Unfortunately, we were not able to spend time with the other departments exploring these interconnecting links, but feel they are important to flag.

Here are several examples:

Police – The police support the Fire Department in arson investigation, but not nearly to the extent needed. Their Public Information Officer needs to coordinate more effectively with the Fire Department's PIO when both departments are on the scene. Both departments rescue boats often respond to the same minor calls for assistance, redundantly.

Schools – Schools need to incorporate fire safety education into the curriculum and/or facilitate Fire Department presentations. They need to actively refer juvenile fire-setters to the Fire Department. The use of fire department inspectors for leaky school roof inspections drains time from an inspection unit that already cannot handle its prime inspection workload.

Public Works – There are many problems related to DPW providing unsatisfactory or overpriced station maintenance at the Fire Department. Also, lack of street maintenance causes undue wear and tear on fire vehicles, significantly increasing their maintenance and out-of-service time.

Procurement – The centralized procurement function has severely slowed repairs to emergency vehicles, stations, and purchase of new vehicles. It also hinders purchasing of everything from new vehicles to everyday supplies to the point that firefighters routinely purchase their own.

Health Services – There is a need for increased contact with the D.C.'s elderly citizens regarding fire safety. Juvenile fire-setters need to be referred more often to psychological counseling. Health Services and the Fire and EMS Department needs to coordinate policy and programs regarding emergency and non-emergency treatment of citizens by the EMS. In particular, to what extent should EMS be the non-emergency care provider to low-income citizens.

Prosecutors, Courts – Prosecution of arsonists and violators of fire and building codes need to be more effectively coordinated.

Consumer and Regulatory Affairs – Need to better coordinate technical fire protection aspects of building plans reviews and inspection of schools.

Organization of the Report

Chapters are devoted to the major services and major support functions of the Fire and EMS Department. In general, the chapters correspond to major divisions or groups of units on the organizational chart of the Department.

CHAPTER 2 – OFFICE OF THE FIRE CHIEF

This chapter addresses a variety of functions that report directly to the fire chief, and also some of the cross-cutting administrative and personnel issues in the department. The functions include the Chief Financial Officer (procurement, budget, payroll); equal employment opportunity (EEO), Americans with Disabilities Act compliance, judicial affairs, and the public information office. While several financial functions such as procurement are being viewed across all departments in parallel studies, the Fire and EMS Department's needs and barriers in this area are addressed here (and elsewhere in the report), too.

The new fire chief has set in motion many changes for improving the department, and virtually all seem to be in a commendable direction. He is well aware of the many problems in the department, and he and his chief officers made no attempt to sugar coat them. They are frustrated by a long history of reducing resources while the job increases in complexity and demand. They are frustrated by many rules of procurement, restrictions on changing Fire and EMS Department rules and regulations, and generally being hampered from allowing the chief to make decisions that he should be able to make with regard to expenditures, re-deployment and many other aspects of running the fire department.

One of the most important reforms that needs to be considered is freeing the fire chief to do his job, or retiring the chief if he is not up to the job. We have undertaken studies in a variety of fire departments across the United States and Canada and know of virtually no other situation where a chief's hands are as tied as they are in D.C.

Overall Organization

The D.C. Fire and EMS Department's grouping of services is somewhat unusual relative to other fire departments. However, there is no one proven organizational structure that works in fire departments.

One of the anomalies that seems to cause a problem is the placement of the fire prevention function under the operations division. This is discussed further in the Prevention Chapter, but we note here that it seems to cause reduced attention and visibility for prevention.

The Organization Chart (Figure 2-1) shows that the Chief's office has many stalks on the chart reporting directly to him – miscellaneous administrative services, the Chief Financial Officer, plus the three assistant chiefs. The Chief has done nothing short of a remarkable job in making a number of key personnel changes that generally seem good, and starting many improvements moving in parallel. The many support services that report directly to the Chief and to the Assistant Chief for services do not appear logically grouped and workloads for the Division Chiefs seem uneven. However, the overall structure of the organization does not appear to be a major impediment or root cause of the many problems the organization has. We will reserve judgment on the need to change the structure.

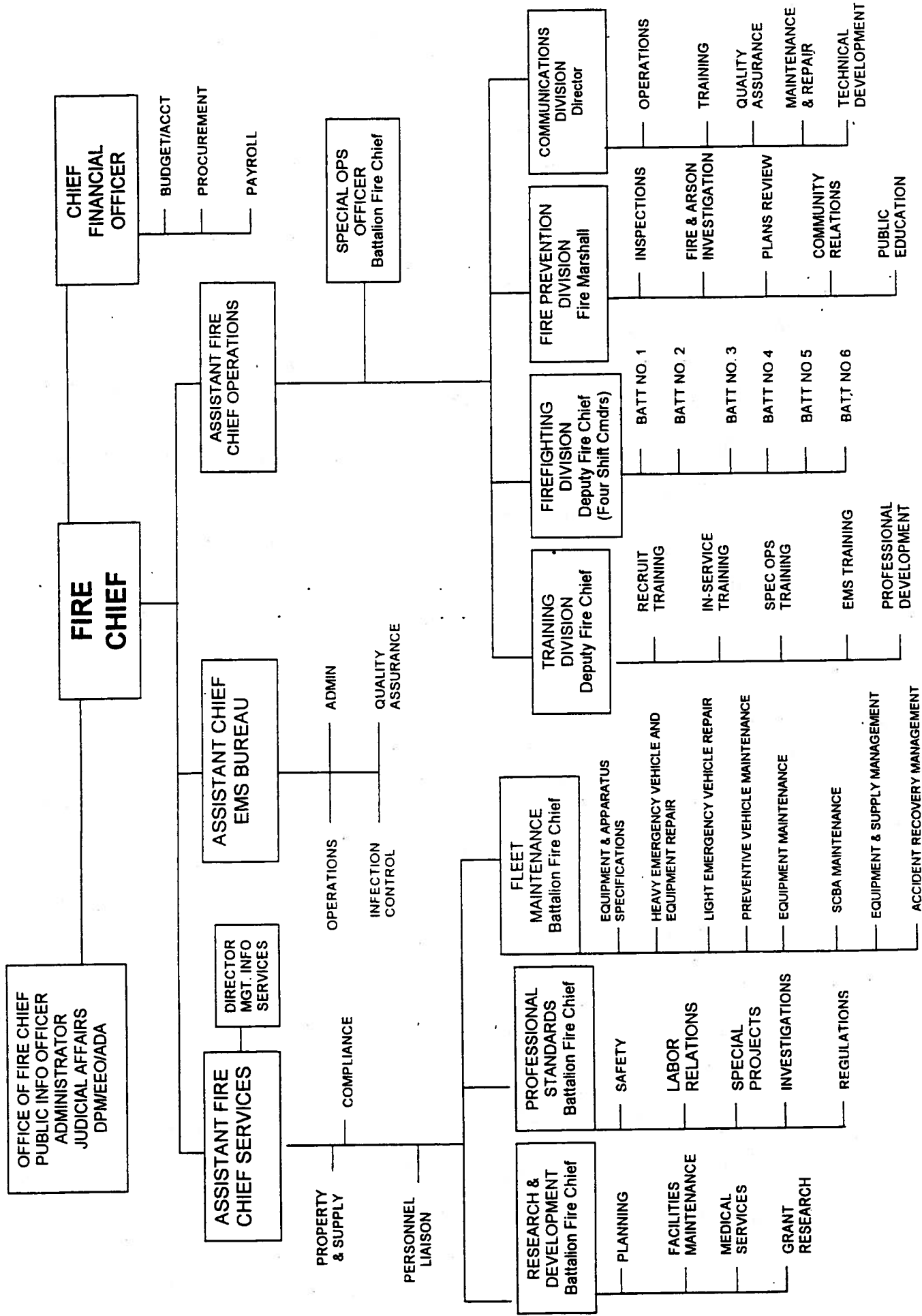
Rules and Regulations Book

The Department's book of Rules and Regulations dictates much that is done or not done in the Department. The City Council has oversight relative to its content. While oversight for major changes to the department is of course appropriate and desirable, the Fire Chief cannot properly manage when every individual change in rules or regulations has to be approved by the Council. This publication is hopelessly outdated and restricts or limits management innovations or change. A good portion of the document no longer applies and many obvious revisions are long overdue. As it carries so much weight, seeking a way to bring it up to date and keep it flexible is critical.

Accountability

There are many examples of the fact that members of the department often are not held accountable for even serious errors or misbehaviors. It was simultaneously heartening and discouraging to hear a demand for higher levels of accountability from chief officers, the IAFF local, the Progressive Firefighters and many individuals. While

D.C. FIRE AND EMERGENCY MEDICAL SERVICES DEPARTMENT ORGANIZATION CHART



everyone has a different perception of who should be accountable for what, there is a common desire for increased accountability in many areas. For example, firefighters who have endangered others through careless driving or misuse of equipment are not always penalized adequately, if at all; personnel are not always held accountable for equipment they have lost or damaged, or facilities damaged (e.g., by hitting the apparatus doors on stations).

There seems to be a cycle of low morale and sloppiness in stations. The training facility includes a fire vehicle junkyard. Many personnel have untidy personal appearance. A wide range of dress codes was observed among people of similar functions.

Accountability must apply to officers, as well as the rank and file. One of the problem areas found in many departments is the difficulty that Battalion Chiefs have in holding their station officers accountable for standards. The Battalion Chiefs are busy and often concerned about damaging morale further through disciplinary actions. Nevertheless, there were widespread perceptions that discipline for everything ranging from lateness to negligence was not treated uniformly. While there is a need to follow-up with a more detailed review of the reasonableness of the complaints and extent of the problem, it is clear even at this point in time that there needs to be a major improvement in accountability – people being held to a standard – and in the equity of applying the rules. Mid-level managers need to be held to task if they do not hold those below them to task.

DPM/EEO/ADA/OPM Functions

This office manages the diversity program, EEO cases, compliance with the Americans with Disabilities Act, sexual harassment complaints and Training Academy orientation. The office works closely with Corporation Counsel, the Office of Human Rights and the Federal agencies at EEOC and the Department of Justice.

The D.C. Fire and EMS Department, more than most, has come close to representing the ethnic make-up of its community, which is becoming ever more diverse.

The uniformed work force is 61 percent minority and the total department workforce is 65 percent minority versus 67.5 percent minority in the population.¹ The leadership of the department – the heads of all the important functions – is about 75 percent minority.

Nevertheless, there remains a legacy of racial tension that has not gone away. There are perceptions and charges of continued discrimination on exams, in disciplinary procedures and in everyday living. These charges may or may not be true, but the perceptions are upsetting to almost all, those who believe them true and those who believe they are unfairly raised. Most acknowledge that much progress has been made, but there is much room for further improvement.

Concerns raised from the workforce include the need to inform in advance all people potentially eligible for a new type of training, a promotional exam, or the opportunity to travel, so they can prepare, and so there is no perception of favoritism in the selection. Some felt this was not always done.

The past three promotional testing examinations for the classified ranks of sergeant, lieutenant and captain resulted in about 85 percent of the promoted employees in these ranks being non-minority. This will affect the future composition of the upper ranks.

There was a desire by some that further efforts be made to recruit more firefighters from within the district. District residents do receive an extra five points on their applications, so all other things being equal, they have an advantage. Some lament the demise of the cadet program, which had worked with high school students and groomed them for positions in the department. The Department's current philosophy is to focus on having a competent work force and a workforce that reflects the diversity of the population. Residency is a secondary consideration.

The loss of funding for the Department's cadet program resulted in its reduction from 75 to 25 cadets and then to its discontinuation. Some firefighters felt that adversely

¹ Data from DC Fire and EMS Department, "Agency Breakdown by pay plan and sex", 8-30-97 In D.C., 36 percent of the populations is non-African American and in the uniformed force, 39 percent.

impacted the ability to hire minority DC residents into the department, though, as noted above, D.C. residents still get 5 points extra on hiring evaluations. The cadet program virtually guaranteed employment as firefighters. The program focused on D.C. high school students as a recruitment target group. However, because hiring has continued to be made from the 1989 test list, the lack of a cadet program has been moot. The end of that hiring list now is being reached, and a new test is needed.

Some members of the department were concerned about the equity of disciplinary actions, pointing out that the percent of disciplinary actions given to minorities was higher than their percentage in the force. This appears to be true though not dramatically so. There is a perception by some of the minority members of the department that discipline is likely to be harsher for a minority firefighter than for a white firefighter doing the same thing. The call was not for fewer penalties but for equity of treatment. The data we have does not raise a large red flag, but merits some further attention.

Diversity/Sensitivity Training – Diversity/sensitivity training, while needed and mandated by the Mayor's Office as part of a law suit settlement, is not adequately funded. At least four hours per year are required. There are providers under contract, but no funding. Some departments (e.g., Sacramento) have been using training in conflict resolution to prevent and resolve problems of interpersonal dealings in a diverse society, with excellent success.

Employees sometimes avoid going through the D.C. EEO office in favor of the federal EEOC. Employees cite lack of trust in the District's involvement for taking this action.

Though the department is almost representative of the resident population it protects, much closer than most big city fire departments, there needs to be further attention to conflict resolution and diversity training, and further attention to reducing perceptions of unfairness.

ADA – The Department has conducted an internal study to measure compliance with ADA. Funds have been proposed in the budget for construction of concrete

improvements and ramps to ensure access to Headquarters and firehouse community rooms.

Public Information Office

The department needs to improve its capability to deal with the media. There have been a number of situations over the past year where there was needless embarrassment to the Department for not getting the total story correct (e.g., the B'nai Brith anthrax scare and the furor over the sensitivity of the Department in connection with the investigation of the death of a workman killed when a steel beam fell from a bridge, necessitating an OSHA investigation). The media does not do a very good job of reporting on positive changes in the Department nor in assisting with public education, another major area requiring public information officer expertise and familiarity with the press. The D.C. Fire and EMS Department has had a relatively negative press compared to other fire departments. There is rarely a positive story, and many negative ones. While some of it is deserved criticism, the PIO needs to take a more proactive role. The surrounding counties, notably Prince George's County, have strong public information functions that are worthy of emulation.

Office of Judicial Affairs

This office is vacant – the position has been funded but it has not been filled. This office will serve as a liaison to the Courts System and Corporation Counsel. The purpose of this function is unclear.

Office of the Chief Financial Officer

All FEMS financial functions are managed in this office. The CFO has oversight over accounting, budget, payroll, EMS Billing administration, and (most recently) procurement. The accounting functions are staffed with nine FTEs, and there are three FTEs for procurement. There is currently one key vacancy – the accounting officer. The

CFO needs another budget analyst to better divide the responsibilities of budget execution and position control.

There is a lack of understanding at various levels of the department as to what the CFO can and cannot do legally within the city-wide budgeting and procurement constraints that the CFO does not control. There seemed to be confusion in the Department about the entire budget process, about budgeting for overtime, about whether money in the budget is clearly earmarked for each division, etc. There is a perception among many rank and file members that the CFO represents the central city purchasing bureaucracy more than the needs of the Fire Department. Better officer education, better internal communication about budget issues, and better effort by the CFO to explain the budgeting issues are all needed. The role and authority of the CFO needs to be better explained to the department.

Operating Budget – A better budgeting system is needed. Each area in the department needs to have a budget for its personnel, equipment, maintenance, and overtime. The budget for an area can be an earmarked part of another unit's budget, but one way or another one needs to give managers an idea of their total budget and develop understanding of what different functions cost. One small example: when firefighting personnel fill in for communications or EMS personnel, their salaries are still charged to fire operations, decreasing the perceived cost of some functions and raising others. A lack of confidence was expressed in many parts of the Department with respect to the quality of the budgeting process.

Capital Budget – Many problems in the department stem from lack of adequate capital investment in major equipment and facilities. Among the major capital projects pending include roof replacements, underground storage tank removal, and the purchase of the 800 MHz communications system. Needed facilities and capital expenditures are discussed throughout this report. Planned acquisitions include an Automatic Vehicle Location (AVL) system and a live fire facility for the training academy.

Procurement Staffing – Contracting authority was recently turned over from DAS to FEMS although the staff at FEMS only has experience with small purchases.

The CPO staff members are lobbying for an experienced procurement manager to join the team and provide direction for their new responsibilities.

The office is understaffed. There is a need for both an experienced lead procurement officer and at least one more contract specialist. Presently, non-procurement (field) personnel are doing the "leg work" (i.e., finding vendors, securing quotes, submitting them to procurement) to help move items through the procurement process. The acting lead procurement officer also has property officer responsibilities. The staff lacks time to monitor spending and enforce the limits of the blanket purchase order agreements.

Although FEMS was given contracts authority, the agency's procurements are still being held up at DAS by the "mid-activation process." Mid-activation is a process where agencies begin the procurement process and then are required to send the procurement over to DAS for approval or release of authority to procure goods and services. After approval the procurement action is returned to the agency to complete the procurement process. Mid-activation in effect nullifies the contracting authority the agency was given.

The District government's highly publicized finance troubles have made procurement all the more difficult. Some vendors will not give quotes to the FEMS at all. Other vendors require up front payments or 50 percent payment on delivery of goods or services. Agencies with good relationships with vendors suffer from other agencies' problems. For example, a FEMS vehicle that was repaired was not released to the agency although payment was received for the services rendered, because of another agency's unpaid debit.

There are concerns that central procurement has created some problems. For instance, the vendor notification process for solicitations was recently changed to a postcard system. Since the change, FEMS has had a solicitation pending twice with absolutely no responses. The FEMS procurement personnel know that although the District has had its problems there are still plenty of vendors who will do business with the District. FEMS procurement personnel suspect that the change to use of a postcard

notification of solicitations has contributed to the lack of response. There is concern that the change was not adequately communicated to vendors, who may consider the postcards junk mail. FEMS procurement is putting the solicitation out for a third time and requesting a pre-bid solicitation conference.

Before contracting authority was given to FEMS from DAS, a Councilmember convened a hearing to investigate the lack of life-saving equipment (defibrillators) for EMS, which was held up for 10 months at DAS. After 10 months of review, the solicitation was returned to FEMS procurement without approval. FEMS procurement armed with new contracting authority completed the process.

The Fire Chief has cited fixing procurement as a priority. Procurement has had a negative impact on operations, creating problems with the fleet in vehicle downtime and inadequate supplies for facilities maintenance. Blanket purchase order agreements have been issued to combat this problem. FEMS has many of these agreements for all sorts of purchases ranging from auto parts to light bulbs.

In the past, FEMS worked closely with DPW to provide repair services. This has changed and FEMS has terminated almost all work (a few exceptions include Underground Storage Tank removal effort) citing DPW's "overcharging" for the services provided. An instance was cited where FEMS was charged \$10,000 for work on heater/boiler system. FEMS management contends DPW staff did no repair work – only a cursory inspection of the system. FEMS has issued a contract to General Services Administration for air conditioning services.

The procurement function is currently under review District-wide. There is ongoing discussion about the potential use of procurement cards. The status of this initiative is unclear, but concern was expressed in FEMS about the plan for the District to submit one payment for all agencies, instead of agencies having ability to pay their own bills. There is a concern about whether the District's "lump-sum" payment approach will be held up by agencies that have not paid their share.

Procurement has a major impact on delivery of services – especially in terms of providing supplies, contracting out for repair services, and purchasing equipment. The office needs additional experienced staff to more effectively manage the workload and take on value-added activities including monitoring spending.

Salary, Pension and Retirements – Pensions for non-firefighting personnel are being addressed in another consultant study, but several issues particular to the Fire Department must be addressed here.

A major problem affecting the Fire Department's budget has been the need to carry approximately 36 people on permanent sick leave, because Congress only allowed the Fire and Police Department together to retire 9 personnel on disability each year from among those hired before 1980. This starts the year with 36 person years of overtime required to fill these position functions – a very wasteful practice. (There may be relief of this problem, via a higher ceiling for disability retirement, in the D.C. budget authorization bill currently before Congress.)

The disparity among pension plans for Fire vs. EMS personnel negatively affects EMS morale, as discussed further in the EMS chapter.

The issue of salary comparisons was raised at a project status late in this Task 1 period. Fair salary comparisons with other cities are difficult to make because of different work schedules, services delivered, and treatment of benefits. We are gathering data but this was not completed in time for a fair, accurate presentation during this task.

Procurement Process – Emergency contracts (which can be very costly) are very rarely used by FEMS. Two examples where emergency contracts were appropriately used:

- A fire truck hit a curb and ruptured its gas tank. The spill flowed over an electrical transformer directly in front of the Environmental Protection Agency. A clean-up contract was issued immediately.

- An engine was repaired in another jurisdiction. On the way back to the District the vehicle broke down. An emergency contract was issued to tow the vehicle from a rush hour lane in the neighboring community.

Office of the Administrator

The Administrator function is like that of a Chief of Staff. This office serves as a coordination point for civilian and uniform operations. As an example, this office was very helpful in coordinating activities for this study.

Overall, the lack of adequate funding and investment in capital equipment and new technology makes it increasingly difficult for the Department to carry out its legally mandated functions and also maintain the growing list of other services provided to support the citizenry. (Specific needs are detailed in subsequent chapters. Some global departmental issues are addressed here.)

Budget – Overtime pay is being used to supplement workforce for staff out on extended sick leave. The administrator is working with Corporation Counsel to review the possibility of increasing the number of retirements allowed for the FEMS and the Metropolitan Police Department.

There is a need for an improved budget process in which managers of divisions and bureaus provide justifications of budgets to develop accurate budget plans. There is discussion about the need to move to zero-based budgeting, and move managers away from the practice of basing current year budget requests on what was budgeted last year.

An initiative to update the department's technology infrastructure has had significant reductions in its planned budgets, hampering the agency's ability to improve internal communication and customer service (e.g., the budget for computer technology).

Personnel – There is a lack of management training for managers and the need for performance standards and performance-based evaluations for personnel, including managers. The general sentiment in the department is that evaluations are too often based

on personality, and not actual performance. There is a need to identify career paths and role models for all employees to improve morale and develop the experience necessary for upward mobility.

Uniformed personnel manage administrative functions including facilities and fleet management. Consideration needs to be given to replacing the uniformed personnel with civilian administrators in some positions, to provide stability and more expertise specific to those functions, and free the uniformed personnel for other functions.

There is a shortage and overuse of overtime for virtually all ranks below Assistant Chief, stemming in large part from a lack of adequate numbers of FTEs, and continued reassignments of people to fill gaps, requiring backfills.

Community Relations

There is no office of community relations per se. Part of this function is performed by the public education section in the Fire Prevention Division. But the overall issue is department-level policy.

Some firefighters suggested that the Department could do more in the way of good community relations at the neighborhood level. They felt that the stations should have more of an open door policy, and encourage neighborhood contacts. We did not see anything from the citizens, nor had time to conduct a citizen survey to validate this concern, but it is noted here for possible future consideration. Going the other way, some stations expressed concern about their security (especially petty theft and vandalism.)

It also was noted that sometimes by chance, all-white companies are assigned to African-American neighborhoods, and that mixed crews would be better for community relations in those areas – a small point of sensitivity that battalion chiefs might keep in mind.

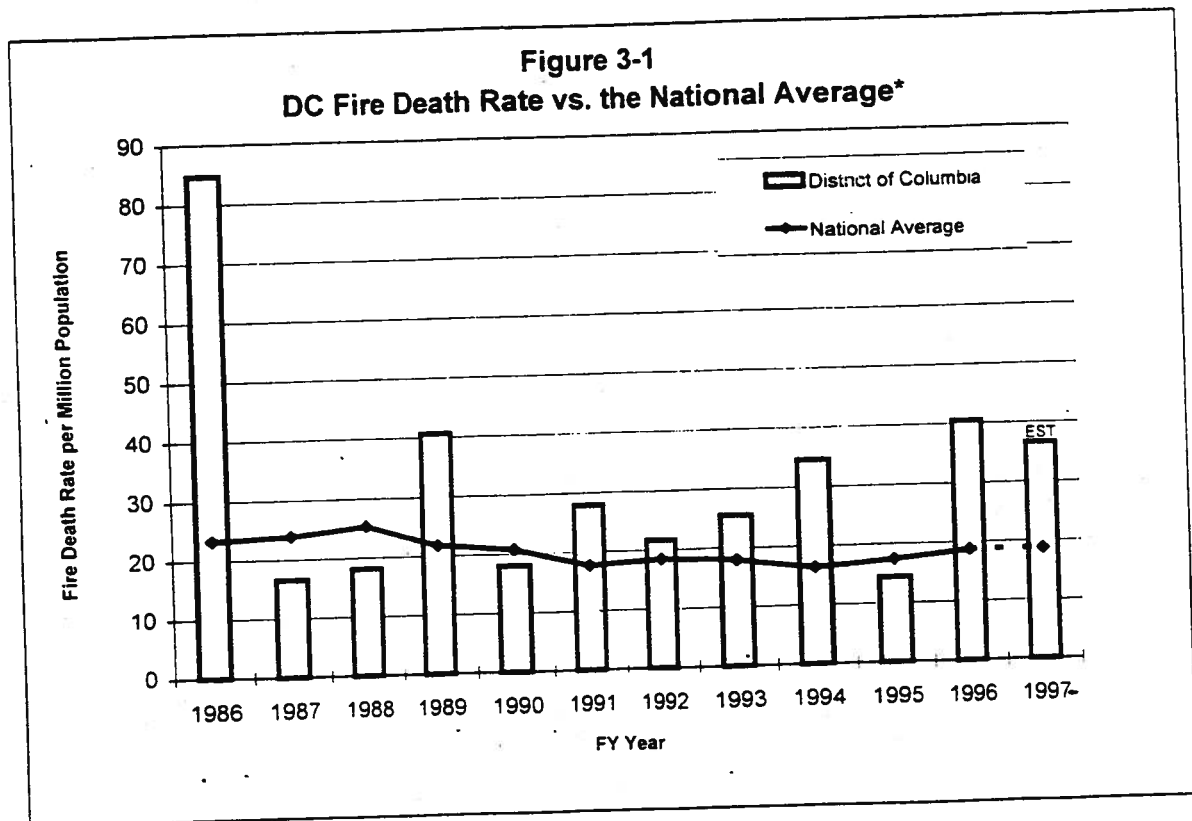
Heavier use of companies in prevention programs (public education in schools, inspection of local businesses) would help community relations – and is needed by prevention, as discussed in the next chapter.

CHAPTER 3. PREVENTION

This chapter addresses all of the functions of fire and injury prevention including Public Fire Education, Code Enforcement, Plans Review, and Fire and Arson Investigation.

The mission statement of the D.C. Fire Department and EMS is "To improve the quality of life for those who choose to live, work, visit, and do business in the District by preventing fires before they occur; and by providing emergency medical and ambulance service." That mission is not being upheld with respect to prevention, nor is its spirit met in the budget allocation. Only three percent of the budget goes to prevention, about par with many other U.S. fire departments, but much lower than is typical in other nations that pay less for their fire protection and have lower life and property losses per capita.

The District of Columbia has a fire death rate averaging more than 60 percent above the national average. Over the past four years the D.C. fire death rate averaged 32 deaths per million versus less than 19 nationally. (In cities over 500,000 population the average death rate nationally was about 20 per million, so the comparison is similar.) Relative to states, D.C. had the third highest death rate after Alaska and Mississippi. Figure 3-1 shows the D.C. fire death rate per capita relative to the national average for a twelve-year period, 1986-1997.



* Source: *Fire in the United States, 1985-1994*, with additional and revised data for 1991-1997 from the D.C. Fire Department. Population estimates used in calculating per capita rates were taken from the police department report by Booz Allen Hamilton. The 1997 estimates were extrapolated from ten months data.

The number of structure fires reported in the District has remained fairly level over the past four years (see Table 3-1).

Table 3-1. Structure Fires in D.C.	
FY 94	1023
FY 95	1031
FY 96	853
FY 97	1060 (prorated from 10 months)

The lack of a complete annual budget for the Fire Prevention Division that includes expenditures for materials, training, and overtime hinders management of the Division's resources. It is essential that the Fire Marshal have complete and detailed

information on the prevention budget available, including training, prevention materials, and office supplies and equipment. He also needs the authority to have the present equipment repaired.

Public Fire Education

The fire department has one person assigned to provide all fire safety education for over 500,000 people. This is far fewer than other cities of D.C.'s size. While some school visits are made with the aid of line company firefighters, the effort is far too small to fulfill the mission. A comparison with the public education effort in other cities is shown in Table 3-2. Relative to the size of the fire problem and high fire death rate in residences, this is too small an effort.

Table 3-2. Comparison of Public Fire Education Across Cities			
City	Population	Public Fire Education Staff	Comments
Charlotte	600,000	2	In addition, each fire station has its own public education program
Pittsburgh	369,000	2	
Baltimore	726,000	4	
Atlanta	395,000	5	Includes PIO function
Philadelphia	1,553,000	8	
St. Petersburg	260,000	3	Includes PIO function
District of Columbia	585,000	1	Supplemented by some PIO and Fire Inspection Time

There was no data available on the outreach of the public education program in terms of the percent of school children or elderly reached. There is no organized plan for providing fire safety education. The program is largely reactive.

The department's Public Information Officer assists in providing information about the fire program to the media, but not nearly to the extent needed. Given the high fire death rate and high fire incidence in residences, the public education program should be much stronger. There is adequate information from the D.C. Fire Incident Reporting

fire safety provision and not on non-fire items (e.g., roof repair) unless more funding and personnel are provided, or the city management agrees to retreat from its fire safety goals.

While some may consider any inspector qualified to do any inspection, inspectors need to be trained on the hazards for which they inspect, or at least have some feel for the subject. D.C. firefighters are not qualified to make inspections of schools other than for fire safety.

Some cities (e.g., Miami) have placed the building department under the fire department, and cross-trained inspectors. Getting the schools open was a critical function of the government and the firefighters are willing to help in any emergency. They have a tradition of assistance to the community. If the school inspection function is to be a regular duty rather than a one-time stopgap, then the fire department needs training and additional inspectors or overtime money from the school system to make up for their regular inspection work displaced by that assignment.

Private School Inspections – Not all private and parochial schools are being inspected annually as prescribed by general order of the fire department, partly because of the priority given to the court-ordered public school maintenance inspection program. Private schools usually are inspected by request only, though some others are inspected as time permits.

Computers and Office Equipment – The Prevention Division depends on its record keeping. A lack of computerized data submission and retrieval capability is adversely affecting the Prevention Division's efficiency and morale. Lack of computer technology is causing a loss of valuable field inspection hours and reducing the time that supervisors have to adequately perform first level supervision of division personnel. They are spending many hours on manual filing and handwriting reports. This work is labor intensive and results in files that are not current. During the first six months of FY97, some 8,000 personnel hours were spent in the office on paperwork. This accounts for almost four staff years in the office during the first six months of FY97, rather than out performing inspections.

Training – There is no formal Prevention Division training program, and no one assigned as divisional training coordinator. Training is provided on a sporadic, non-scheduled basis. The lack of an annual planned training curriculum does not ensure that all divisional personnel receive a minimum level of continuing education. Training is not mandatory.

Vehicles – Division personnel routinely are forced to use privately-owned vehicles to perform their jobs. There are only 15 fire department vehicles assigned to a division with 590 personnel, most of whom are in the field daily. This creates a liability problem for both the personnel and the department. The divisional vehicles that are available are generally in bad shape, and not all are equipped with fire department radios and other emergency equipment. This prevents the full use of these vehicles for emergency response in times of natural disasters and/or criminal or terrorist incidents. In addition, fire inspection personnel routinely go into high crime, drug-infested areas with no immediate means to request police assistance. There are documented cases where fire personnel in the District of Columbia have been attacked with firearms.

Clerical Support – At the present, only two clerical positions are authorized: one clerk typist and one receptionist. The receptionist spends the vast majority of her time answering telephone calls from the public, leaving only one person for support duties. It is not efficient or effective to have a clerical support ratio of 2 to 59. Operational personnel, including the Chief Fire Marshal, spend large numbers of hours on clerical work: filing, typing, etc.

Code Revision – The District of Columbia Fire Prevention Code Supplemental of 1992 does not have a provision that automatically adopts the latest edition of a nationally recognized building code and NFPA code. At present, builders and developers are quite often confused over which version of the building and fire protection codes are currently in effect in D.C.

Night-time Inspections – Because the inspectors spend most of their time on day shifts, there is not an adequate fire inspection program for places of public assembly and alcoholic beverage establishments that operate primarily at night (e.g., night clubs,

theaters, bars, convention centers, etc.). On-duty fire investigators provide coverage at night as time and workload permits, but not enough.

Underground Storage Tanks (UST) – The EPA requirement to upgrade underground storage tanks will impact the divisional inspection workload over the next fiscal year and must be addressed. By December 22, 1998, all tanks must be upgraded. There are an estimated 30,000 tanks in the District of Columbia, of which 212 belong to the fire department. The two people assigned to inspect USTs cannot possibly handle the workload projected and there did not seem to be a plan to cope.

Plans Review

Built-in fire protection is one of the keys to fire safety, and to holding down public fire protection costs. D.C. is operating under a strong building code, but lacks the capacity to adequately enforce it.

The department does not have the in-house capability to undertake the review of complex built-in fire protection systems. There are no fire protection engineers in the Department. They have not been using any engineers from the private sector or from other city departments. By comparison, Prince George's County, Maryland has nine fire protection engineers participating in plans review. Most of the plans review work is left to firefighters in the inspection section, who do the best that they can. Without advanced technical training, they frankly are not qualified to cope with the complexity of modern fire protection systems. All other major Washington area jurisdictions utilize fire protection engineers.

Unlike mechanical and electrical plans, private builders are not required to hire engineers to certify fire protection plans prior to submission, which increases the importance of a competent review by the fire department.

Fire protection requirements often have to be reviewed several times before the builders make the requested corrections satisfactorily. Plan approval can take eight

weeks for large projects; in most cities there is an expectation by builders of getting faster service than that.

The Plans Review Section consists of three plan reviewers and a trainee, all of whom are uniformed employees without technical training. The Section receives plans and accompanying documentation from the general engineering section after the latter has completed its review and adjustments for modification. All building plans submitted to DCRA for permits, with the exception of those filed for single-family homes, follow this process. Approved plans are submitted to the inspection division to be scheduled for site inspection by the field inspectors.

The Plans Review Section reviews plans for compliance with the following:

- National Fire Protection Association (NFPA) Life Safety Code
- BOCA Building Codes
- National Electric Codes
- D.C. Supplemental Requirements (Code)

The section's reviews focus on matters related to life and fire safety systems. Deficiencies are noted, and a letter of defect submitted to the client for resolution prior to approval.

The plans review section receives 2-3 new plans daily. If the fire department review team remains focused they can properly review an average of 3-6 plans per week. A staff of three plan reviewers and an occasional trainee are not sufficient for the workload.

Based on the workload statistics provided, the cycle time for plan reviews is excessive. These time frames are established based on the construction cost of structures irrespective of code requirements and level of complexity of the safety systems.

The backlog in plan reviews has been reduced from over 100 in 1996 to approximately 30 in September 1997. This number stood at 70 in March of 1997. Over

662 permit-related jobs were processed by the DCRA in FY96. The majority of these were referred to the Fire Department plans review section for examination and approval.

There is a lack of consistency in how plans are reviewed. Part of the problem is too much turnover of personnel; as they develop experience they often are reassigned to other tasks. In the 1980s, two reviewers were able to keep up with workflow, because they were experienced reviewers. There is some duplication of efforts between the Fire Department reviewers and the general engineering reviewers. Areas of responsibility are not clearly defined. Structural and electrical units sometimes review for the same items.

Fire and Arson Investigation

The fire investigation section is currently handling an arson case through the determination that the fire is incendiary (arson), and then hands it off to the Metropolitan Police Department for identification, location and arrest of the arson offender. This is not leading to an acceptable rate of case closures and a high rate of conviction in court.

There have been questions recently over the quality of the police department's homicide investigations. Arson often is a more difficult crime to investigate than homicide because of the difficulty in proving that a crime took place, in addition to catching the culprit.

Arson investigation requires close cooperation with the police in order to protect and assist investigators in making arrests and testifying. The fire department has had inadequate cooperation from the police, who themselves are overwhelmed.

Several years ago the police had two full-time detectives assigned to work with the fire investigation section. At the present time there are no specially assigned detectives. The fire investigators must request assistance from a general assignment "District" detective who has no special arson investigation training. It is widely known that to successfully bring to closure, with an arrest, a normally clandestine and often complex arson fraud case, a high level of commitment of investigative resources and

highly technical expertise must be evident. This prescription for success does not exist today nor has it existed for the past five years.

In 1993, a U.S. Fire Administration Arson Technical Assistance Management Team reviewed the District of Columbia's arson investigation organizational structure and issued a report indicating several changes were needed to help make the system efficient. To date, most of the recommendations have not been implemented. (See report from USFA dated March 1992.)¹ The U.S. Attorney for the District of Columbia is aware of this problem.

One of the consultant's recommendations five year ago was that the Fire Department give selected investigators peace officer authority, but this was not implemented. The fire inspectors cannot carry weapons or make arrests, which they need to do if the police cannot provide better assistance.²

The result is an extremely low clearance rate of about 10 percent if just the cases reported to the FBI are counted, and about 5 percent if both incendiary fires and suspected arsons are considered (see Table 3-3).

Table 3-3. FBI Uniform Crime Reporting Data Calendar Year 1996 (Source MPDC)	
	Number of Arsons
Single Residential	54
Multi-Residential	13
Commercial	7
Other Structures	1
Public Buildings	12
Vehicles	75
Total Arsons	162
<i>Total Cleared by Arrest</i>	<i>17</i>
<i>Percent Cleared by Arrest</i>	<i>10.4 %</i>

¹ TriData Corporation wrote the report under contract to the U.S. Fire Administration.

² FEMS held discussions in mid-September with the police to initiate training of fire investigators at the police academy.

NOTE: During 1996, the Fire Department recorded an additional 240 suspicious fires, for an incendiary/suspicious fires total of 402. The U.S. Attorney's Office reported that 21 of these were closed by arrest, a clearance rate of 5 percent.

Juvenile Firesetters – While the District of Columbia's juvenile firesetting problem has not been adequately quantified and analyzed (it should be), it is serious, especially in economically depressed and low-income areas, based on analogies to similar cities. This situation is exacerbated wherever there is drug-related activity and gang activity. A juvenile firesetter program is a critical element in reducing both intentionally set fires by juveniles and fires set by "curious kids." Such programs have proven to dramatically reduce recidivism among juvenile fire-setters. It is important to nip juvenile firesetting in the bud as it has been shown to be a precursor to life as a professional criminal. Many serial killers have histories of starting as juvenile firesetters. (The "Son of Sam" is one of the notorious examples.)

Modern fire prevention approaches include the establishment of a formal Juvenile Firesetter Counseling program. D.C. has none. To the Department's credit, this gap has been recognized and assistance has recently been obtained from the U.S. Fire Administration to organize a Juvenile Firesetter Counseling workshop in the Fall, involving members of various city departments. References of juveniles to the programs must come from social agencies, health agencies and schools as well as from parents and public safety. (So far, the D.C. school system has declined to participate.) A Juvenile Firesetter Program is a critical element in reducing both intentionally set fires by juveniles and fires set by "curious kids."

Data Collection and Management – The Fire Investigation Section does not have an effective data collection program. The scant information that is being gathered is collected by hand and not maintained in a form that makes it readily available and useable.

There is no single source of data on fire and arson investigations. The Police Department arson section maintains information that pertains to their actual investigations, while the fire department collects its own information of fire investigations. There is virtually no transmittal of information on the disposition of cases

back to the fire department after the police department picks up the cases. Moreover, there is a basic difference in how police and fire personnel report vehicle fires. This affects whether or not they are included in the figures for arson or for destruction of property. That is, the rate of arson presented in public figures will vary depending on which agency investigates them.

As a result of this fragmented record keeping process, the fire investigation and arson prosecution effort is severely handicapped. There is no arson offender "profiling system" used to record suspect address, M.O. motivation, geographical location and socioeconomic background information. In addition, the lack of management data hampers effective deployment of investigative staff. There is no arson management information system (AIMS) to record and analyze factors to be used in arson prevention.

Fire investigation reports need to be based on a standard criminal investigation report format rather than on the present system. It is essential that the fire cause and origin determination process utilized by the investigator be clearly defined. Police detectives and prosecutors must understand how a fire was determined by the Fire Investigator to have been willfully and maliciously set in order to establish that arson took place, and prosecute it successfully.

Case Management and Workload Management – The fire investigation division currently does not have adequate case management and control. This is partly due to the fragmented investigation approach now used in the absence of an effective data collection management program. It is further hampered by the absence of a single authority to establish, implement and maintain a strict and effective case control system. This deficiency results in low productivity due to the failure to identify and develop solvable cases. It frequently also will result in poor case quality, which hampers successful prosecution.

Departmental response criteria for fire investigator call out states that for any fire, accidental or incendiary, with a loss of over \$10,000, an investigator must respond. This can cause a high rate of unnecessary responses. The fire cause often may be evident and

recordable by the company officer who prepares the incident report, without calling the investigator.

Arson Prevention – The fire investigation section has not developed an arson education and intervention program that is needed to combat the incendiary problem in high fire-prone areas. The tremendous increase of fire activity that normally occurs in areas with higher-than-normal crime, drug incident rates and gang activity, can be expected to worsen without the availability of intervention and education programs.

Investigator Training – The current qualifications for assignment to the fire investigation division are passing a written test and experience in the Fire Prevention Division for a prescribed period of time. Some people with higher investigation qualifications and training cannot be used as investigators because they have not met part of the existing criteria for selection.

No minimum level of investigator training is required to enter or to remain in the investigation unit. A formal, on-going investigator training program is essential ensuring both investigator competency and arson awareness among suppression personnel. Training is essential to remain knowledgeable of the requirements of NFPA #921 "Guide to Conducting Fire Investigations".

Arson Detection/Evidence Preservation – Firefighting division personnel have not been given adequate instructions on preservation of evidence as part of their continuing education. This is essential to insure that arson is recognized and evidence protected at potential crime scenes. Fire investigation photographs are not taken and fire scene diagram not made for all fires investigated, a requirement specified in the NFPA #921 Guide.

Investigator Safety – Fire investigators routinely are among the first to arrive on the scene of a fire, along with fire suppression personnel. They are sometimes on their own to complete their investigation. As noted above, fire investigators are not provided with firearms for personal protection, even though they are routinely placed in dangerous

situations investigating criminal activity (arson) at night. This is especially threatening in high crime districts where there is illegal drug-related activity.

Criminal firesetters do not necessarily know or respect the difference between a fire investigator and a police investigator. Their main concern is dealing with their own predicament, which can and often does place fire investigators in harm's way. An unarmed investigator is quite vulnerable.

Communications Equipment – The fire investigation section is currently located at Engine Company 24. It is essential for investigation units to have immediate and secure direct communications with fire and police dispatch, as well as with other agencies which are normally relied upon – Fire Marshal's office, laboratory resources, and so forth. The investigators are handicapped with inadequate radio equipment. They share channels used by fire operations. Portable radios quite frequently fail in buildings and in other areas of the city. This condition compromises confidentiality that frequently is essential and can create a dangerous situation should the investigator require assistance. (Chapter 8 discusses all communications needs.)

Clerical Support – At present, the fire investigation section does not have any clerical support. The individual investigators file all reports, prepare files and correspondence, and answer the telephone. The extra clerical burden placed on the investigation section takes away from the ability to address more needed and appropriate work such as fire investigation, fire suppression training in the area of fire scene preservation, proper documentation and planning prevention and intervention efforts.

SOP – The Standard Operating Procedures lack a fire investigation section. This is essential to serve as a road map for handling all section activities and to provide a reference document for newly assigned personnel.

Personnel Evaluation – There is no specialized performance evaluation system for investigators. A generic system tends not to be a good basis for the evaluation of personnel in highly technical positions. Investigators should be rated against fire investigation job elements.

Coordination with Other Agencies – There is no U.S. Treasury or Bureau of Alcohol, Tobacco and Firearms "Memorandum of Agreement" on ATF arson investigations in the District of Columbia, though attempts to obtain a MOU have been made. There is also no formal Anti-Arson Advisory group. Some means is needed to coordinate all agencies having a legal interest in the effective control of the arson problem.

Sick Leave – At present two fire investigators have been on sick leave for over 18 months. This causes built-in overtime to provide minimum staffing for the 8:00 p.m. to 8:00 a.m. shift, and an overall loss in productivity. Departmental resolutions provide that after 60 days, the "vice technician" (temporary assignment) must fill the position. This has not been done.

CHAPTER 4 – EMERGENCY MEDICAL SERVICE

In the District of Columbia, emergency medical service (EMS) is delivered by a combination of fire units providing first-responder EMT-level service and the EMS Bureau (EMSB) of the Fire and Emergency Medical Services Department (FEMSD), which provides basic life support (BLS), advanced life support (ALS), and patient transport.¹ The mission of the EMSB is “to provide quality emergency medical care and transportation 24 hours a day.”²

In recent years, the EMSB has responded to over 100,000 calls annually for medical assistance. At one point, the District of Columbia had the second-highest per capita EMS call volume in the nation. By any measure, the EMSB is a high-volume EMS system. Figure 4-1 shows the number of medical incidents for each fiscal year from 1993 to 1997.³ The figure draws a distinction between medical incidents, medical responses, and medical transports.

A medical *incident* is a 9-1-1 call for medical assistance. The tally of medical incidents somewhat *undercounts* the EMS call volume because some calls are not initiated by a citizen calling 9-1-1 (i.e., they are police- or fire-initiated radio calls or are initiated when a person hails a passing EMS unit or walks into a fire station). A medical *response* is a single vehicle responding on a call. Many incidents (about 25 %) generate more than one response. Finally, a *transport* is the actual transportation of a patient to a hospital. About three-quarters of medical incidents result in a transport.

¹ ALS units are staffed by paramedics and provide high-level care such as intravenous therapy, administration of medications, intubation (breathing tube placement), and cardiac monitoring/defibrillation. BLS units are staffed by emergency medical technicians and provide a limited range of essential emergency care procedures including automated defibrillation but not including intravenous therapy, medication administration, or intubation.

² Emergency Medical Services Bureau, *Mission Statement*, June 1997.

³ 1997 data shown are extrapolated from 11 months of FY 1997 data.

Figure 4-1. EMS Call Volume Indicators

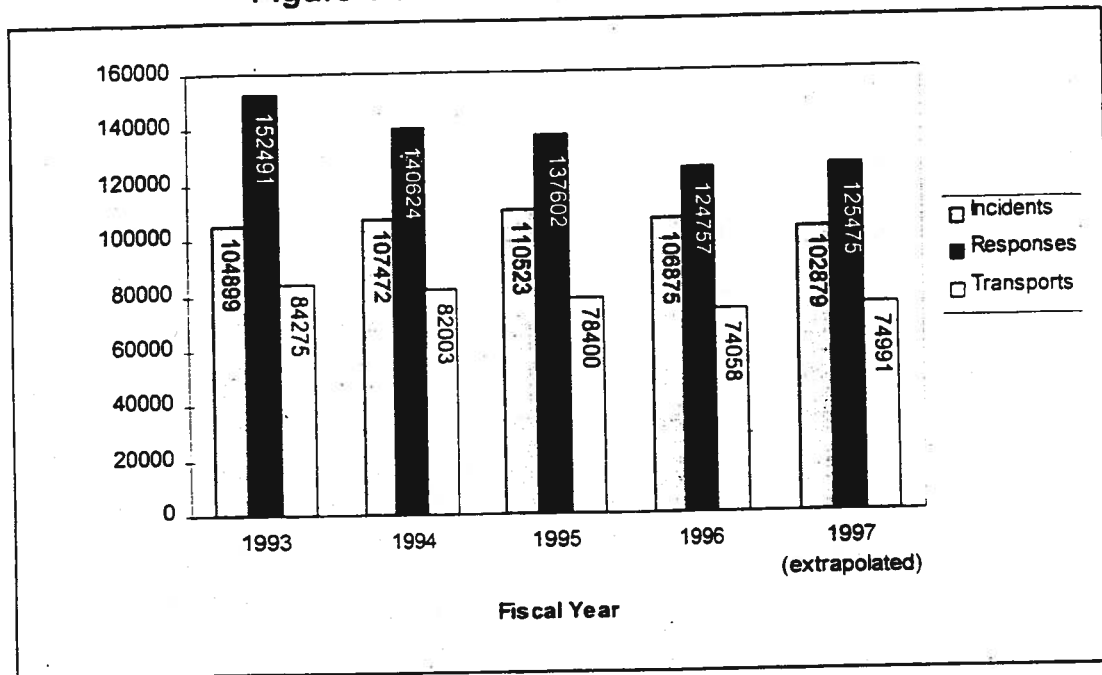
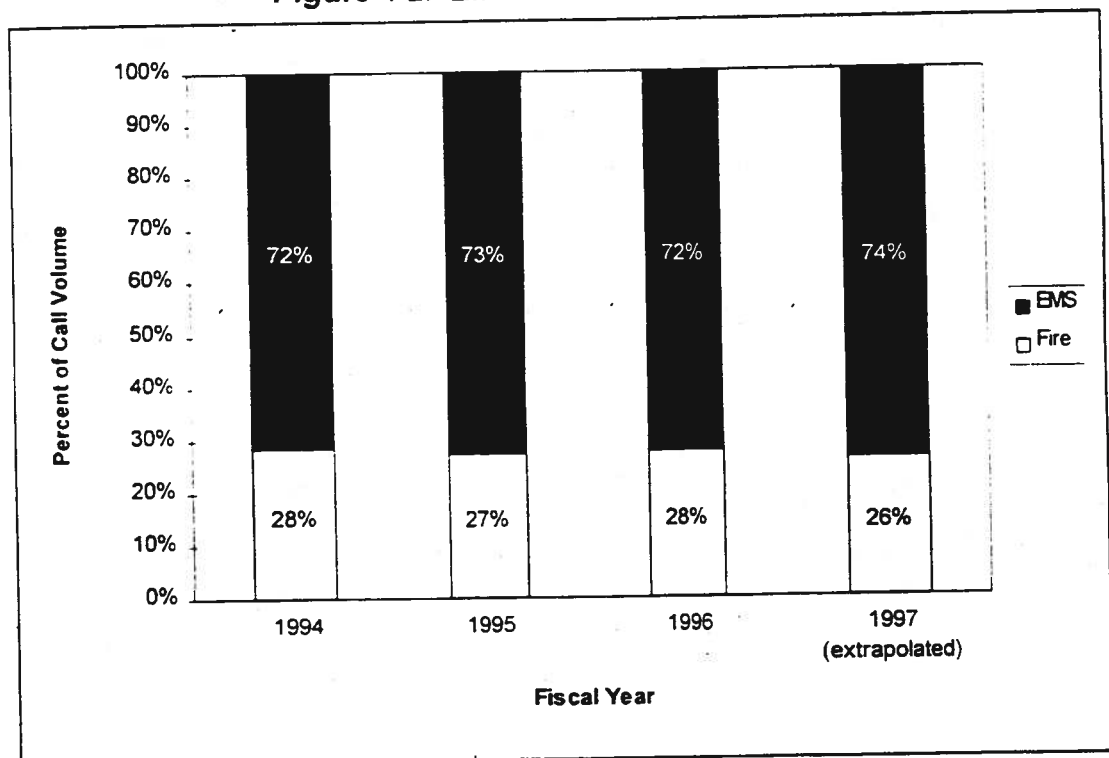


Figure 4-2. EMS vs. Fire Call Volume



As Figure 4-2 demonstrates, medical assistance is by far the most frequent service provided by the fire department.

EMS Benchmarks

In order to provide a point of reference, the delivery of EMS in the District of Columbia was benchmarked against six other East Coast cities. The cities used for comparison are listed in Table 4-1.

Table 4-1. EMS Benchmark Cities

<i>City</i>	<i>Population</i>	<i>Square Miles</i>	<i>Population /Sq. Mile</i>
New York	7,311,966	308.9	23,671
Boston	585,000	47.5	12,316
Philadelphia	1,553,000	135.1	11,495
Miami	367,016	35.6	10,309
Washington, D.C.	585,221	61.4	9,531
Baltimore	726,096	80.8	8,986
Pittsburgh	369,000	55.6	6,637

*Source: U.S. Bureau of the Census 1992 estimates

Organization of EMS Delivery – In most of the cities, EMS is organized within the fire department. Two cities, Boston and Pittsburgh, provide EMS through a separate city government agency. Fire units provide BLS first responder emergency medical care in all of the cities. Miami is the only one of these cities utilizing paramedics on engine companies.

EMS Demand – Table 4-2 shows the raw count and population-adjusted count of EMS incidents in the benchmark cities. The per capita demand for EMS is higher in Washington, D.C. than in any of the other cities in the benchmark group. This is a root cause of many problems in the Fire and EMS Department: high call volume, high stress level, vehicle wear and tear, etc.

Table 4-2. EMS Demand Comparison

<i>City</i>	<i>Population</i>	<i>Number of EMS Incidents in FY 96</i>	<i>Incidents Per 1,000 Population</i>
Washington, D.C.	585,221	106,875	182
New York	7,311,966	1,240,119	170
Pittsburgh	369,000	60,000	163
Miami	367,016	59,707	163
Baltimore	726,096	111,575	154
Boston	585,000	87,000	149
Philadelphia	1,553,000	157,276	101

*Source: U.S. Bureau of the Census 1992 estimates

Number of EMS Units – The number of EMS units on the street varies greatly in each city depending on the time of day and the day of week. All of the cities except Baltimore and Miami place additional units in service or remove units from service when the anticipated call volume increases or decreases respectively. Most of the cities utilize a combination of BLS and ALS units, but Pittsburgh and Miami utilize only ALS units.

Table 4-3. Unit Call Volume Comparison

<i>City</i>	<i>Population Density (per sq. mile)</i>	<i>Incidents Per 1,000 Population</i>	<i>Min. # of Units on the Street</i>	<i>Max. # of Units on the Street</i>	<i># of Calls Per Max. # of Units</i>
Baltimore	8.986	154	18	18	6,199
Pittsburgh	6.637	163	9	13	4,615
Philadelphia	11.495	101	26	38	4,138
Washington, D.C.	9,531	182	20	28*	3,816
Boston	12.316	149	17	23	3,783
New York	23.671	170	unavailable	395	3,139
Miami	10.309	163	25	25	2,388

*Includes two Rapid Response units in a pilot program.

Table 4-3 shows the overall EMS resource levels of the comparison cities. The final column of the table is the annual call load per unit were all the available resources of the EMS system deployed all the time. This is a proxy for relative busyness of the system.

Number of Paramedics Assigned to ALS Transport Units – All of the cities nominally staff ALS transport units with two paramedics except Miami. Miami staffs eight of its units with one paramedic and one EMT and the remaining 13 units with two paramedics.

Ambulance Service Fees – The charge for of BLS transport in Washington, D.C. is \$71 less than the charge in of the other cities in the benchmark group. The charge for ALS services in DC is \$17 more than the average of the other cities. Table 4-4 lists these data.

Table 4-4. EMS Fee/Billing Comparison

<i>City</i>	<i>BLS Charge</i>	<i>ALS Charge</i>	<i>Collection Rate (Percent)</i>
Boston	\$375	\$375	unavailable
Baltimore	150	250	22
New York	350	500	unavailable
Philadelphia	300 + \$4/mile	375 + \$7/mile	44 full 9 partial
Pittsburgh	300	300	80
Miami	195	275	50
Washington, D.C.	207	362	52
Average (excluding D.C.)	278	345	50

EMS Budget – Table 4-5 indicates the relative amount spent on EMS in each of the cities in the comparison group. The District ranks fourth on per capita EMS spending. The average amount spent per capita in the comparison cities, excluding Washington, D.C., is \$26.50 – almost exactly the amount spent per capita in the District.⁴

⁴ The table does not include an average budget since that figure is so severely skewed by the New York City EMS budget.

Table 4-5. EMS Budget Comparison

<i>City</i>	<i>EMS Budget</i>	<i>EMS Budget Per Capita</i>
Boston	\$22,000,000	\$37.61
Pittsburgh	\$13,600,000	\$36.86
Miami	\$10,373,679	\$28.30
Washington, D.C.	\$15,600,000	\$26.66
New York	\$142,600,000	\$19.50
Baltimore	\$9,757,656	\$13.44
Philadelphia	\$16,000,000	\$10.30
Average (excluding D.C.)		\$26.50

EMS Bureau Personnel

Unlike the emergency responders of the Firefighting Division (FFD), EMSB personnel are uniformed civilians. Originally, ambulance duties in the District were performed by the firefighters. The job was ill-regarded and therefore given to whomever had the least seniority (i.e., the "rookies"). Eventually, in the early 1970s, ambulance positions were "civilianized" as a cost-saving move.⁵

Most of the positions in the EMSB are classified in the Department of Personnel "699" series (essential employees). Civilian employees of the FEMSD are not subject to the disciplinary authority of the Fire Chief's General Orders, but rather Chapter 16 of the District Personnel Manual.

By statute, the Medical Director is required to be a physician who is board-certified in emergency medicine. There is a chain of command in place under the Medical Director. A long time ago, the chain of command used civilian titles (such as "Director" and "Deputy Director"). Approximately in the early 1990s, the EMSB converted to a paramilitary rank structure to have a managerial structure more similar to that of the FFD, but that structure was not officially recognized until the last fire chief's

⁵ Some firefighters who were interested in continuing to perform ambulance duties remained in the newly established EMS Bureau. They maintained their status as firefighters and their affiliation with Local 36 of the International Association of Fire Fighters. Three of this group are still employed in the EMSB.

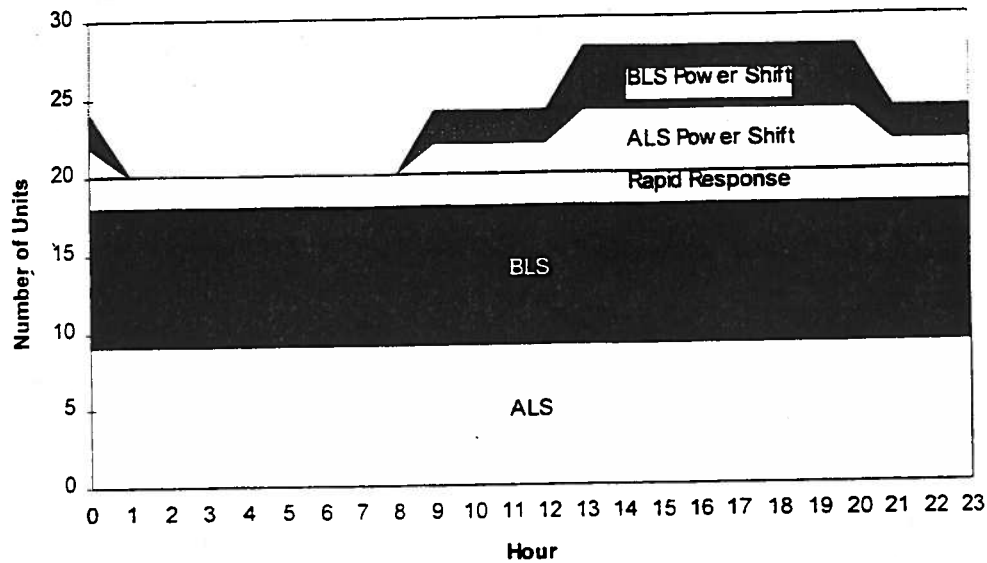
administration. At present, the EMSB is headed by a full-time Medical Director who holds the rank of Assistant Chief for EMS. This is highly unusual relative to other cities, where the Medical Director is a consultant responsible for protocol, quality assurance, and training but is not a line supervisor. In many cities the Medical Director is a part-time consultant.

Resource Deployment

At a minimum, the EMSB deploys nine advanced life support (ALS) ambulances (called "medic units"), nine basic life support (BLS) ambulances, and two ALS "rapid response" units on a 24-hour-a-day basis.⁶ In an effort to match EMS resources with demand, the EMSB also schedules two additional ALS and two additional BLS units to be in service from 9:00 a.m. to 9:00 p.m. and another two ALS and two BLS units to be in service from 1:00 p.m. to 1:00 a.m. Figure 4-2 shows the level of resources deployed at any given hour of the day. Tailoring capabilities to demand is an excellent, efficient practice, but it could be further tailored yet.

⁶ Rapid response units are non-transporting ALS units.

Figure 4-2: EMS Resource Staffing by Hour of the Day



EMS units are stationed in firehouses throughout the District of Columbia. Table 4-6 lists the department's medic units and ambulances, and the engine company number of the station to which they are assigned. Twenty out of 33 fire stations have a medic unit or ambulance (or both).

Table 4-6. Station Assignments of EMS Units

<i>Engine Co.</i>	<i>Medic Unit</i>	<i>Ambulance</i>	<i>Address</i>
1	24		2225 M Street, NW
2	11	15	500 F Street, NW
4		19	2531 Sherman Ave., NW
6		5	1300 New Jersey Ave., NW
8	9	16	1520 C Street, SE
9		2	1617 U Street, NW
12	17		2225 5 th Street, NE
13		6	450 6 th Street, SW
14	18	4	4801 North Capitol Street
15		12	2101 14 th Street, SE
16	14		1018 13 th Street, NW
19	7		2813 Pennsylvania Ave., SE
20		8	4300 Wisconsin Ave., NW
21	1		1763 Lanier Place, NW
24		25	5101 Georgia Ave., NW
25		26	3203 M.L.King Ave., SE
30	22	10 and 13	50 49 th Street, NE
31		20	4930 Connecticut Ave., NW
32	3		2425 Irving Street, SE
33	23	18	101 Atlantic Street, SE

Medic 17

Medic 17 is a technical rescue medic unit, a highly commendable service. It is staffed by specially trained paramedics who have volunteered to receive specialized training in confined space rescue, high-angle rescue, hazardous materials response, and other techniques that enable them to integrate more fully into highly technical emergency operations. Medic 17 does not receive preferential treatment to keep it "in service" (i.e., available for assignment) but if a need for Medic 17's services develops when it is

already on an assignment, another medic unit may be called to take over Medic 17's patient(s) when it is feasible to do so, so that Medic 17 may be released for the technical rescue call.

Engine Company First Response

Every engine company of the FFD is staffed with at least one firefighter cross-trained as a certified emergency medical technician (EMT). Many but not all firefighters are cross-trained. This allows fire suppression apparatus to be used to respond to certain types of medical emergencies in advance of EMSB units. This operating procedure, called "first response," is widely used throughout the United States as a means to deliver trained emergency medical personnel to the scene of medical emergencies rapidly. Since there are 33 engine companies in Washington, DC, the chances are good that an engine company will be in reasonably close proximity to any medical emergency, and arrive faster than an ambulance or medic unit. For time-sensitive (i.e., life-threatening) medical incidents, having an engine company respond will "stop the clock" while an ambulance or medic unit (which are capable of transporting patients) respond from a greater distance. The ambulance units have much higher cycle times than the engines; they spend longer on each call because they usually have to transport a patient, and therefore have lower availability, and are often away from their station. For many ALS cases the engine companies provide drivers or assistance to paramedics during transport, which increases the engine company cycle time, too.

Major Problems With EMS

This section of the report deals with major problems in the FEMSD that hamper the delivery of top-quality EMS in the District of Columbia. Some of these problems can be rectified with "quick fixes," which are identified as such in a subsection of this chapter. Most of these problems, however, are structural or cultural in origin and will require substantial change to remedy.

Poor Response Times

Response times are probably the biggest single problem of the D.C. EMS system. They are *well above* the national standard for both BLS and ALS.

The best way to assess response times is to measure percent compliance with a response time goal cumulative frequency distribution (as opposed to average can be disturbed by a small number of extreme response times). This is because averages can be distributed by a small number of response times.

The national response time standard for an ALS system that uses first responders is to have an ALS unit on scene within 8:59, ninety percent of the time. This year, the 90th percentile response time for ALS arriving on scene to critical medical calls has yet to fall below 20 minutes, and the 90th percentile response time for the first-arriving unit of any kind has yet to fall below 10 minutes. Figure 4-4 shows that the city-wide average is over 10 minutes. For critical patients, these response times can mean the difference between life and death – when the patient's bleeding is stopped or breathing restored, or heart defibrillated in time.

Response times to EMS calls appear relatively similar across wards of the city. (as Figure 4-3 indicates). The initial response by FFD companies responding on medical incidents were close to the city average in virtually every ward (Ward 7 and Ward 4 had slightly higher averages, but less than one minute difference). Figure 4-4 demonstrates that medic unit average response times were slower than the citywide average only in Wards 4 and 9. It should be noted that these figures were compiled from only one recent month's worth of data, but that there is a strong likelihood that they are indicative of the recent experience of the system. In general, the level of service delivery is quite similar across the city.

Figure 4-3. Ward-by-Ward Comparison of Fire Unit Response Times

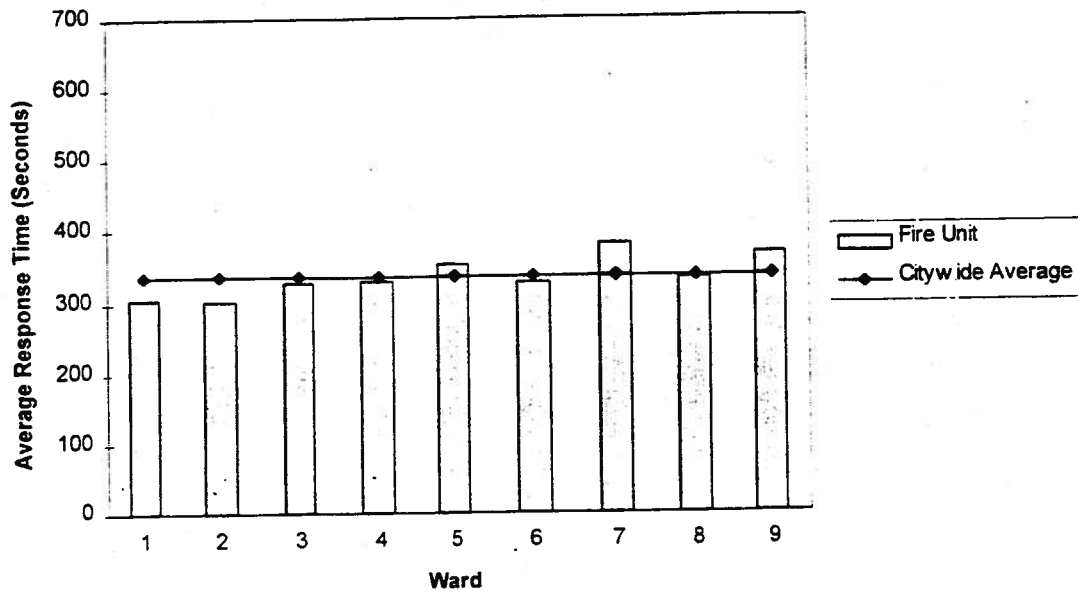
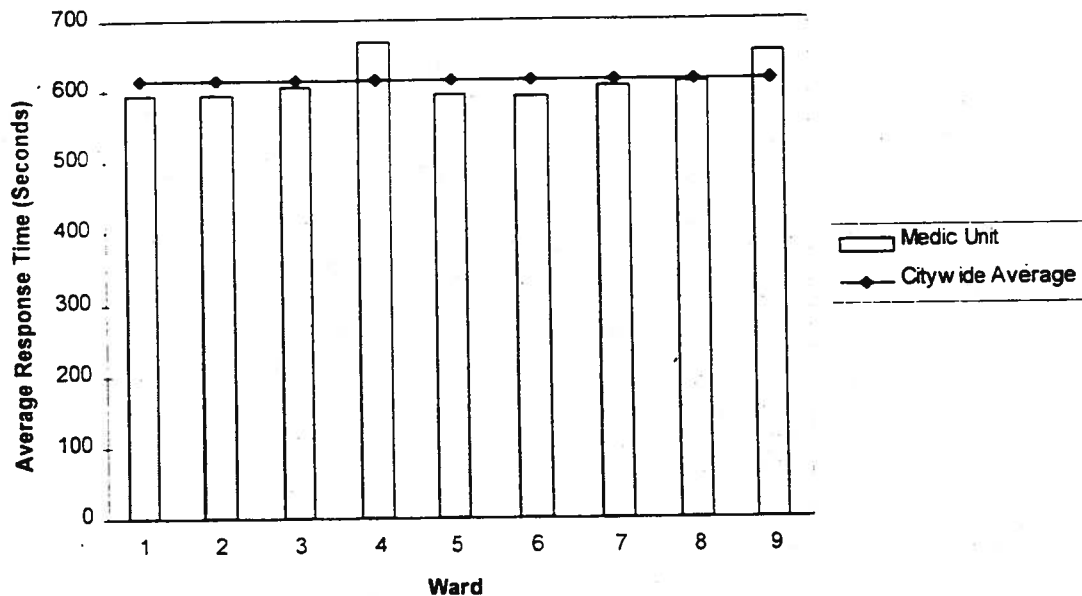


Figure 4-4. Ward-by-Ward Comparison of Medic Unit Response Times



True Response Time – Unfortunately, the response time picture is *worse* than the statistics indicate. The way in which response times are calculated underreports the length of time it takes to reach a patient. The response time reported by the FEMSD is the interval from when a call is received by the FEMSD communications center, to the time the first unit arrives on the scene and alerts the dispatcher by radio. (This is the usual method cities use to compute response time.) In Washington, D.C., many patients are located in buildings at other than the street level. True response time is not only the “horizontal response time” (i.e., how long it takes a vehicle to get to the scene), but also the “vertical response time” (i.e., the amount of time it takes for EMS personnel to get from the vehicle to the patient’s side). In some instances, this vertical response time can be quite great, and it is not captured anywhere in the usual response statistics. It is necessary to add from one to five minutes to published response times in order to get an idea of how long it truly takes to begin treatment on a patient.

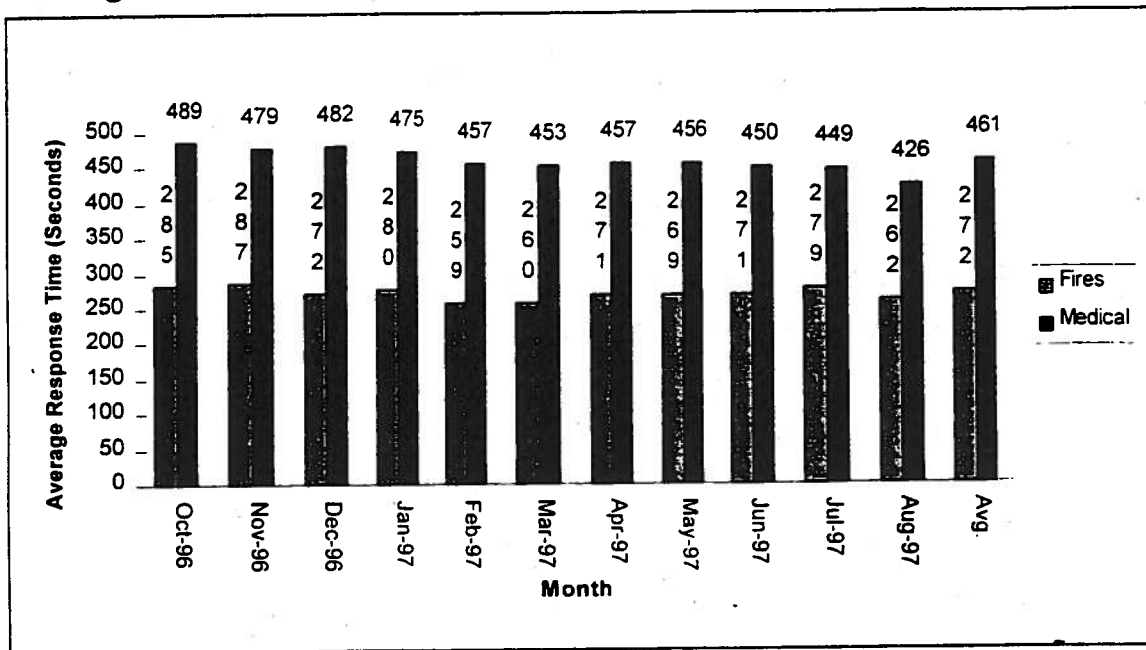
Response time data are also subject to random error because events are manually timestamped. Neither fire nor EMS vehicles are capable of transmitting computer-encoded timestamps via the radio. Dispatchers must manually enter event timestamps (such as the arrival of a unit on the scene of an emergency) into the computer-assisted dispatch (CAD) system. Since there are sometimes delays in entering the information, any calculations that rely on these data are subject to error, unless adjustments are made.

Disparity Between Engine Company Response Times for Fire and EMS Calls –

There is a marked disparity between the response times for fire apparatus responding to fire calls as opposed to their responses to critical medical (Charlie- and Delta-level) calls. Figure 4-5 shows that the average difference in response times between the two types of calls is 3:09. When the call-to-scene times of fire units responding to medical emergencies are adjusted for a slightly longer dispatch interval (an extra 1:16 on the average), fire units still take an average of 1:53 longer to respond on critical medical emergencies.⁷

⁷ Dispatch intervals on medical calls are longer than dispatch intervals on fire calls because the Medical Priority Dispatch protocol takes longer to complete than a fire dispatch.

Figure 4-5. Fire Unit Average Call-to-Scene Times by Type of Call



Assuming that fires and medical emergencies have a reasonably similar spatial distribution in a given engine company's first-due area, it appears to be that the fire units are simply taking more time to respond to medical calls than to fires. Our subjective impressions of engine company activation periods hinted at that empirical observation. Although suppression crews race to beat each other out of their fire stations on fire calls, they tend to adopt a less aggressive attitude on EMS calls. One possible reason for this difference may be an accumulated cynicism after going out on too many non-emergency or non-critical EMS calls. No one with whom we spoke really had an answer for the difference. Regardless of the underlying cause, this problem requires immediate attention on the part of the FEMSD. It can be corrected by company officers leading their crews to respond as quickly to medical emergencies as they do to fires, and by battalion chiefs seeing that engine company officers provide such leadership.

Note that even with the disparity discussed above, the engine companies generally get to incidents faster than EMS units. The first responder system using the engine companies works well, but could be even better.

EMS Unit Delays for Engine Company Triages – TriData heard anecdotes – but saw no evidence – that some EMS units remain at fire stations and do not immediately respond to a medical call until the first responding engine company has triaged the patient and given a radio report. Such actions, even if they occur occasionally, are not acceptable and would constitute gross negligence were a patient to suffer an untoward event because of such a delay. This type of behavior was not observed while TriData analysts were in fire stations or riding with EMSB personnel, though the presence of outside observers probably would be sufficient to inhibit that particular practice.

Heavy Work Load/Too Few Units

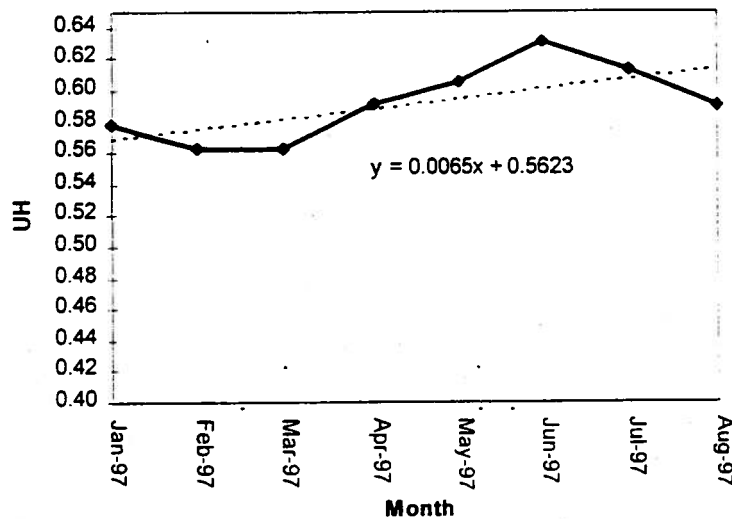
By national standards, EMSB personnel have a heavy work load. The EMS industry measure of workload is called “unit-hour utilization” (UHU), a ratio which expresses the amount of time an EMS system is using its resources. In Washington, DC, the UHU averaged 0.566 for the time period from January 1997 through August 1997. This means that the average EMS unit spent almost 57 percent of its available service time handling runs, way above the industry standard of 42 percent.

High-performance EMS systems seek to optimize performance through close monitoring of the Unit Hour Utilization measure. System parameters are adjusted to guide the UHU toward the industry standard of 0.420. Higher UHUs translate into longer response times. It is felt by system status managers in most high-performance EMS systems that UHUs above 0.420 mean that response times are slower than they should be and personnel are worked harder than is reasonable for effective caregiving and safety.

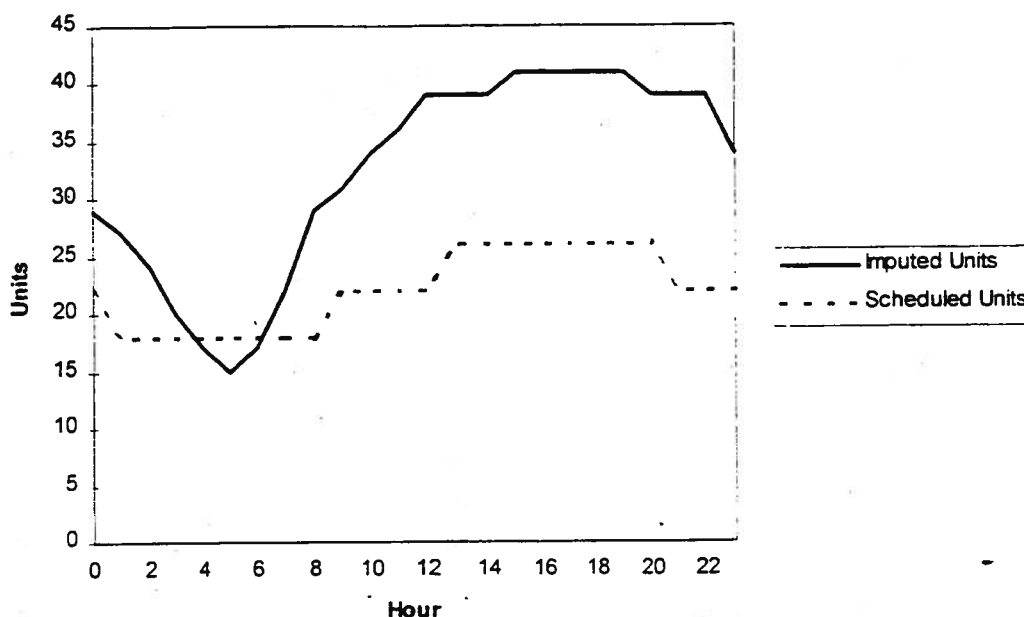
Washington, DC has seen a monthly increase of 0.007 in its UHU since the beginning of 1997 (see Figure 4-5 on the next page). Bringing the UHU into line with the national standard target of 0.420 should be a priority for the FEMSD. Accomplishing this will result in lowering response times, improving morale among FEMSD personnel, and improving EMS quality.

The UHU could be lowered by adding more units. Figure 4-6 shows the number of units that are scheduled for each hour of the day and the number of units that should be scheduled as imputed by the average hourly EMS demand and a target UHU of 0.420.

Figure 4-5. UHU Trend (Jan. to Aug. 1997)



**Figure 4-6. Number of Scheduled vs.
Number of Imputed EMS Units Needed**



As can be seen, the current number of EMS units is sufficient only from 4:00 a.m. to 6:00 a.m. At all other times during the day the number of units required to maintain a UHU of 0.420 well exceeds the number of schedule units. The maximum number of units needed (41) would be from 3:00 p.m. to 9:00 p.m.

This lack of units is the primary driving factor behind the slow response times and an equally dangerous result – “burnout” of personnel.

Personnel “Burnout”

EMS personnel report and exhibit poor morale. Several employees contacted TriData personnel on their own volition to express their level of dissatisfaction. A number indicated that they were preparing to quit their jobs as soon as financially or logistically possible.

Stress among employees is rampant. Many EMS personnel in the FEMSD seem to be “burned out.” There is high personnel turnover: of the 364 EMS providers hired in the last 11 years, 147 – about 40 percent – were either terminated or resigned. There is short tenure: 49 percent have six or fewer years on the job. The turnover and tenure are manifestations of the burnout problem. The problem is exacerbated by the tension between firefighters and EMS personnel, and perceived inequities.

The causes of burn-out in the EMSB include the following:

- ***Units often have many back-to-back calls*** – The UHU of EMS units is high. Units stay busy, and some can spend their entire 12-hour shift on “back-to-back” calls.⁸
- ***There is no provision for meal breaks*** – In the Metropolitan Police Department, officers can request the dispatcher to grant them a “10-70E,” which allows an officer a 30-minute meal-break with a reasonable assurance of not being interrupted unless no other officer is available to handle an emergency. No such provision exists for EMS units. Meals are eaten on a “catch-as-catch-can” basis. Fire companies also do not have a provision for a meal break, and sometimes it is difficult for them to eat regularly too; however, this is the case most of the time for EMS units, especially those that spend most of their shift running back-to-back calls.
- ***Lack of respect from colleagues*** – The lack of respect which many FFD personnel have for EMS personnel adds to their stress. Although firefighters are not to blame for the stress, EMS personnel cannot readily turn to them for support. This makes the EMS workers more susceptible to burnout.

⁸ Calls are said to be “back-to-back” when a call is given to an EMS unit just after it “clears” from an earlier call. There is no set definition of what constitutes “back-to-back.” A working definition is perhaps any call that occurs within 15 minutes of completing the previous call.

- ***The career ladder is short*** – The possibilities for advancement in the EMSB are minimal. An oddity in the personnel classification scheme makes it all but impossible to be promoted into a field supervisory position without being in the training division. This, in conjunction with the D.C. residency preference, means that the only people who have a strong chance of being promoted from the field are D.C. residents who are assigned to EMS Training. Because the opportunities for advancement within the department are so limited, highly skilled personnel are looking for employment in places where advancement is more regular. Loss of trained and experienced personnel for these reasons represents an unfortunate, preventable circumstance that debilitates the system.

Vehicle “Wear and Tear”

The high call volume means that the EMS vehicles are subject to constant use. Under such conditions, vehicle “wear and tear” increases almost exponentially. The Fleet Maintenance Division does not have an automated vehicle tracking system, so it is not possible to calculate an EMS vehicle break-down rate (e.g., the number of EMS vehicle breakdowns suffered per 100,000 miles traveled). However, based on our observations and anecdotal information, it seems probable that this rate is substantially higher in D.C. than that in other systems. By comparison, an exemplary vehicle maintenance system such as that employed in Albuquerque, New Mexico, yields an “out-of-service” rate for mechanical reasons of less than one percent.

The current plan to replace a third of the EMS fleet each year would be an excellent step forward in reducing the mechanical problems which take EMS vehicles out of service.

A minor side problem: new EMS vehicles are usually used to replace those assigned to the busiest units. Some neighborhoods have complained about always getting second-hand units. Since these are generally areas with a lower call volume, the current policy is reasonable and needs to be explained to the citizens when objections to it are raised.

Excessive "Drop Time" at Hospitals

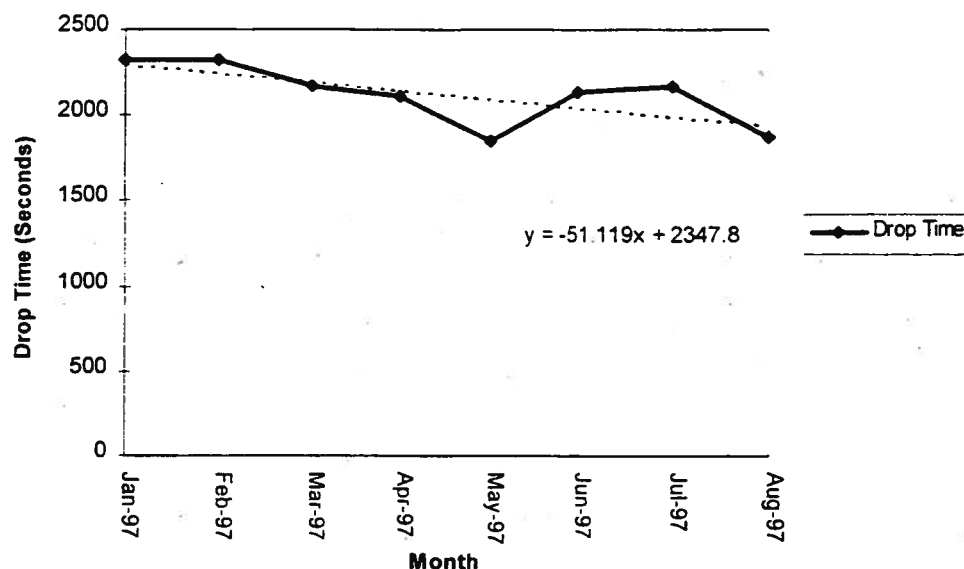
The interval between arrival at a hospital and returning to service is called "drop time." Drop times are monitored by the communications center and field supervisors. When a unit's drop time gets too long, a field supervisor will go to the hospital to determine the reason for the delay and to expedite that unit going back into service.

Because there is no provision for meal breaks, there is only one sure time for EMSD personnel to get enough time to go to the bathroom, get a bite to eat, or simply relax for a few minutes – the interval between having transferred the patient to the hospital staff's care and going back into service. At all other times, EMS personnel are subject to being dispatched on a call or are on a call.

Since crews need to clean their vehicles, restock, and give reports to the hospital personnel, there is a plausible reason for some delay at the hospital. Accordingly, there is an incentive for crews to delay going in service at the hospital.

Of late, closer monitoring of drop times has caused an improvement. Figure 4-7 shows 1997 year-to-date average drop times for EMS transport units. A monthly reduction of almost a minute (0:51) per month can be noted. Despite this improvement, the August 1997 ALS-BLS composite drop time of 31:23 still remains *well above* that of highly performing EMS systems (e.g., in Richmond, Virginia drop times average between 22 and 23 minutes; in Albuquerque, New Mexico, drop times on critical medical emergencies average 13 minutes, and only 9 minutes for non-critical calls).

Figure 4-7. 1997 YTD Average Drop Times



Transporting Patients Who Do Not Need Ambulance Transport

Mayoral orders and the EMSB medical protocol dictate that any patient wishing to be taken to the hospital by ambulance shall be transported. Anecdotes abound about people who call for an ambulance simply because they know that they can get a “free” ride to the hospital for clinic appointments, medication refills, etc. Although there is a nominal user fee charged for ambulance transportation, this is hardly a deterrent because the FEMSD is unable to collect on 48 percent of its patient bills (another problem area). Most abusers of the EMS system know that they can get away without paying, and hence have no incentive to secure alternative means to transportation to the hospital.

Because the FEMSD does not offer any alternative modes of transportation, valuable ambulance resources are consumed without any means of more appropriately matching the level of service required to the demand for service. This creates delays in response times when the system becomes overloaded.

Different Cultures

The FEMSD is a composite of two organizations with two different mission statements, and two cultures. While the missions overlap in places, the philosophical approaches and organizational cultures operative in completing those missions differ greatly. The mission statement of the FEMSD is as follows:

The mission of the Fire and Emergency Medical Services Department is to improve the quality of life for those who choose to live, work, visit, and do business in the District by preventing fires before they occur; extinguishing those fires that do occur; and by providing emergency medical and ambulance service.⁹

Although EMS accounts for approximately 75 percent of the FEMSD's call volume (see Figure 4-2), the EMS function appears last on the list in the department's own statement of what it does and takes the second position in the name of the organization. The prevention role in the mission statement does not include prevention of injuries. Some fire departments have changed names to reflect the equality if not primacy of the EMS function, and go to lengths to indicate the dual mission. Regardless of the semantics and word order, the EMS personnel have been made to feel they are second class citizens.

Wilson (1989) describes "organizational culture" in terms which are particularly relevant to the understanding the chasm which currently exists between the FFD and EMSB:

Every organization has a culture, that is, a *persistent, patterned way of thinking* about the central tasks of and human relationships within an organization. Culture is to an organization what personality is to an individual. Like human culture generally, it is passed on from one generation to the next. It changes slowly, if at all.¹⁰

The culture of an organization defines its sense of right and wrong, helps dictate its mission, and controls its willingness to accept new ways of doing things.

⁹ D.C. Fire and Emergency Medical Services Department. *Agency Mission Statement*, 1992

¹⁰ Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books. p.91 (emphasis added)

Because the firefighters are uniformed (i.e., are sworn public servants, not civilians), they perceive themselves as different from the EMS personnel, whom they equate with civilians. There are many firefighters who joined the fire department to fight fires ("to put the wet stuff on the red stuff" in the parlance of firefighter), especially the older ones, but even some younger firefighters espouse a condescending view of EMS personnel.

Whereas firefighters perceive themselves as providing a public safety service, EMS personnel perceive themselves as delivering a medical service – more a part of the system of public health than the system of public safety. This perception is congruent with the desire of the medical community.

It disturbs some firefighters that they have to wear the same uniform as EMS personnel, and it was quite upsetting to many firefighters to have the "D.C. Fire Department" renamed the "D.C. Fire and EMS Department" several years ago. Such changes were intended to elevate the stature of EMS within the department and to provide a "more unified" organization.

There are two main factors that make the fire service culture the dominant culture in the FEMSD. The most important is that the two cultures report to the Fire Chief, who is perceived as being from the fire service. The Fire Chief sets the priorities and the tone for the department. Although EMS constitutes approximately 75 percent of the Department's call volume, EMSB personnel note that their budget is only about 15 percent of the departmental budget. (All agree that the budget should not be based on proportion of calls, but rather what is needed to provide the EMS service.) Second, the fire role predates the EMS role.

Lack of Respect – The cultural differences translate into a lack of interpersonal respect for EMS personnel, who report being made to feel unwelcome in many fire stations. In some stations, EMS personnel are not permitted to eat with the firefighters. The lack of respect has added to a situation of low morale within the EMSB. Poor treatment of EMS personnel by firefighters is not reserved for EMSB personnel only. We heard reports of shoddy treatment of EMS personnel from other fire

departments outside of D.C. that have provided mutual aid to D.C. for large events such as the Million Man March and presidential inaugurations. Some services have reportedly declined recent requests for further mutual aid from the EMSB, on the basis of how they have been treated in the recent past.

Split Structure – The command structure for EMS is separate from that of the rest of the fire department. EMSB supervisors do not have authority over FFD personnel, whereas fire officers maintain nominal authority over EMSB personnel while they are in the fire station and not on assignment.

Whereas fire officers can transfer from one division in the fire department to another, EMSB supervisors cannot. Many positions outside of the EMSB require detailed knowledge of and experience in firefighting; however, many do not. Nonetheless, those positions are not open to EMSB personnel. Because the EMSB budget is subsumed in the fire department budget, over which the Fire Chief has virtually full control, EMS management is viewed primarily as advisory in nature – at least that is the perception of many EMSB managers.

Since control of the EMSB budget was shifted from the Medical Director to the Fire Chief, part of the EMS budget has been used for fire suppression items. For example, money earmarked for the EMSB to purchase a special, heavy-duty ambulance for Medic 17 to carry its specialized rescue equipment was used to purchase equipment for the FFD. While there is no doubt that the FFD had major equipment needs, and the re-allocation of funds was reasonable, the EMS personnel's perception was that they were "raided."

Difficulties in Accountability/Discipline

The split lines of authority for EMS personnel can cause problems in accountability and discipline. When they are in quarters, the EMS crews are supposed to report to the station officer. When they are at emergencies, EMS personnel report to an EMS supervisor.

This creates problems for the fire officials. They report that EMS personnel are difficult to manage or discipline, and don't follow the directions of station officers. Fire officers report that EMS personnel maintain an "I-don't-answer-to-you" attitude because they know that the fire officer will have to send a complaint up the chain of command, across to the EMSB at the level of the Medical Director, and back down the chain of command in order to discipline the EMT or paramedic.

Further exacerbating this situation is the opinion of many fire officers that nothing is ever done about the complaints they file. For example, firefighters who are late for duty can be disciplined within the FEMSD's progressive discipline system. EMS personnel are not subject to that system of discipline. There is little that the fire officer can do to ensure that EMS personnel report to work on time. In the fire service culture, this lack of accountability is intolerable, and adds to the split on the cultures.

Difficulties in Timekeeping

Fire officers are hesitant to sign overtime authorization because they don't really know the EMS crew's schedules and when overtime is appropriate.

Perceived Lack of Parity in Pay and Retirement

One of the major sources of poor morale within the EMSB is their perception of a lack of parity in pay and retirement benefits with firefighters.

Comparisons are complicated by differences in shifts and in FLSA rules for overtime. The difference in the base pay scales for firefighters and EMTs seems justified

because firefighters should be compensated for the higher risk of death or injury they face. EMS personnel are killed and injured in the line of duty, too, but not with the frequency with which firefighters are killed or injured. EMS work, while not without its dangers, is inherently less dangerous than firefighting.

The same rationale seems less convincing to explain pension differences (city-wide pensions are being examined by another consultant study).

Retirement Systems – There are presently three different retirement systems in place in the FEMSD. Which system a person is a member of depends on that individual's job classification (uniformed vs. civilian) and original date of hire.

Personnel within the EMSB who have an original date of employment prior to October 1, 1987 fall under the federal civil service retirement plan, which allows one 50 years of age or older to retire after 20 years of service at 50 percent of salary. Those employees with an original date of employment of October 1, 1987 or later fall under the Defined Contribution plan of the D.C. government. They are eligible to retire at 50 percent of salary after their 50th birthday if they have completed thirty years of service. The Defined Contribution plan seems unsuitable for EMS personnel given the nature of the work they perform. EMS work is physically demanding and mentally stressful. Thirty years of field EMS work will take its toll on a person's body – back and leg problems are common among EMTs, as is stress. Since there is limited opportunity for advancement in the EMSB rank structure, the average EMSB employee is likely to remain in the field until he or she is eligible to retire. While the Defined Contribution plan may be adequate for an office or clerical worker – in other words, thirty years of office work is probably not going to be as debilitating as thirty years as a field care provider – it forces EMS personnel to stay in the field long after they are ready to leave the system.

Pay – When firefighter/EMTs from the FFD are detailed to work on ambulance units, they generally drive the ambulances (i.e., fill the ACA position), while the EMSD partner is in charge and the primary caregiver. This seems unfair to the EMSD personnel since being the ACA entails somewhat less work than being the ACIC and since the

responsibility for the patient, the unit, and the crew rests with the ACIC. The disparity in pay is worse when the FFD EMT is working on overtime to fill in.

Because of the work rotations of EMS personnel, they end up working two "short" weeks of 36 hours apiece followed by two "long" weeks of 44 hours apiece. Although this equates to the same number of base hours over a one month period as if they were working 40-hour weeks, EMS personnel lose benefits on the short weeks because District Personnel Regulations state that any person working less than 40 hours per week shall have benefits prorated. This means that although EMS personnel are scheduled to work over 2,500 hours per year (most full-time jobs are 2,080 hours per year) they are not considered full-time employees.

This quirk in the compensation package of EMS personnel seems even more unfair to the EMSB personnel because, under FLSA rules, firefighters do not lose benefits when they work short weeks.

Medic 17 Protective Gear

Only 10 of 25 paramedics assigned to Medic 17 (the most fully cross-trained and integrated medic unit in the FEMSD) have the proper personal protective equipment they need to carry out the specialized, technical rescues they are trained to perform. This lack of equipment diminishes the value of the unit and can jeopardize the safety of the personnel assigned to the unit and people needing the rescue skills.

EMS Training Short-Falls

A complaint of some EMSB personnel is that their training needs seem to take a back seat to those of the FFD. For example, it was noted that there are approximately 16 EMSB personnel who are prohibited from driving because they were involved in collisions. Some of these people had been scheduled for the required remedial driver training at the Blue Plains training center, but found that their training had been canceled without notice so that firefighters could be trained to drive fire apparatus. These EMS

personnel are having a very tough time getting cleared to drive again, meaning that they cannot rotate driving and patient care responsibilities with their partners.

Since it is difficult and expensive to train (and retrain) paramedics, and since their continuing education requirements are far more stringent than those of other personnel in the FEMSD, they should receive at least equal if not higher priority for filling training requests (barring unusual other demands).

Few Paramedic Training Classes – The Department has run only four paramedic training classes since 1989. Providing training for personnel to upgrade their certification from EMT-Basic to EMT-Paramedic is essential to provide upward mobility within the EMSB. Personnel from both the EMSB and the FFD have had to seek out paramedic training elsewhere. It is encouraging to note that they are motivated to become paramedics; that will be important for the likely future of the fire service.

Lack of Trust in EMS and Fire Management

Field EMS personnel widely expressed a lack of trust of both EMS and fire managers. Specific examples of what engendered this distrust were not given. In part it is a sense that information “from the top” isn’t communicated down to the line personnel. Generic statements that managers don’t look out for or back their personnel (presumably in instances of conflict with the public or the use of professional judgment) were commonplace.

The lack of trust can be exceptionally damaging, because it causes employees to think first about safeguarding their employment status and only after that to take other things into consideration. That also detracts from accountability, because of the reluctance to hold subordinates accountable if not backed up by one’s own supervisor.

Other Problems With EMS

This section deals with problems that interfere with the delivery of top-quality EMS services, but which cannot be characterized as having the same urgency or

complexity as the issues described above. This is not to say that these problems have a minimal impact on service delivery, but rather to indicate priorities.

EMS Billing

Data collection for EMS billing is still less efficient than desirable, despite notable improvements made over the past year.¹¹ Problems include lack of automation equipment, poor documentation, excessive forms handling, poor paperflows, and antiquated and inadequate physical facilities.

Paper Handling Problems – The most obvious problem with the EMS billing procedure is that it is paper-based. Elsewhere in the United States, EMS systems are moving towards pen-based or laptop-based EMS documentation, although the vast majority of systems still utilize paper-based documentation. Given the large annual volume of EMS incidents in D.C. which need to be documented, assessed, analyzed, and billed, it is essential that the FEMSD implement some sort of computerized EMS documentation system .

The billing process is initiated when EMS personnel collect patient information on an EMS run sheet (FD form 151). One copy of the FD form 151 is submitted to the receiving hospital to become part of the patient's medical record. The other two copies are taken back to the fire station and deposited into a "lock-box."

The forms are collected and brought to the EMSB offices, where they are checked by three personnel for accuracy and completeness. They are then forwarded to Lockheed IMS, the bill processing vendor, for bill generation and collection.

FFD EMTs use FD form 902 to document calls for which engine companies provide medical first response. These forms, too, are submitted to the EMS Billing Unit for review and filing. In the event of an inquiry or investigation, they are accessed for

¹¹ The collections rate improved from 34 percent of billings to 54 percent. Total revenues exceeded \$6.4 million, an improvement from the previous year of over \$1 million.

supporting information. The FD-902 form, if properly completed, can provide information omitted from an FD-151 that would allow a bill to be processed.

Poor Documentation – Because the FD-151 is a paper document, no instantaneous error-checking is possible. EMS personnel frequently fill out the forms improperly or incompletely. One reason for this is that the FD-151 is crowded and complicated – it is not “user-friendly.”

The high rate of defective documentation results in a relatively high percentage (approximately 35 percent) of FD-151s being classified as “non-billable.”¹²

Work Process Inefficiencies – The work performed in the EMS Billing Unit is excessively manual and labor intensive. All documents submitted to the unit are examined manually. The staff processes volumes of documents on a daily basis to determine levels of completeness. Most of this work could be performed in a sampled format or in conjunction with another activity. None of this work would be necessary were an automated documentation system in place.

The staff follows no established or enforceable standards for processing documents within the unit. Essentially, documents are visually inspected for missing information or errors, but no proper records are maintained for continuous quality improvement and consistency.

There are steps in the billing process in which duplicate work is being performed by the current in-house staff and the contractor. This causes confusion, inefficiency, and poor customer satisfaction. For example, customer calls are being received by the EMS Billing Unit, the Public Affairs Office, and Lockheed IMS. These calls may require attention from any one of these areas. The recipient of the call may take the request and perform the research work or refer the caller to another office. This is often necessary because files are being held in different locations based on time period, and there is no joint data system.

¹² Also, approximately 30 percent of the FD-902s filled out by engine company crews are being completed.

The files located in the Billing Unit at 13th Street are not well streamlined to satisfy inquiries and research expeditiously. The staff has to rely on their memory in some cases and, in others, a general filing method which is time consuming and inefficient to use.

The current staff of the Billing Unit is performing functions that would be unnecessary with the proper automation of EMS documentation and electronic communication with the billing vendor. The EMSB staff currently assigned to forms review could be put to much better use on any number of vital office functions and special projects.

Poor Facilities/Antiquated Equipment – The physical facilities housing the billing unit are in a poor condition, and the equipment located at the EMS Billing Unit is severely outdated.

The building contains an elevator that is unreliable and located in an ADA-inaccessible and inconveniently constructed lobby. The elevator lobby lacks clear, conspicuous direction signage for members of the public or other officials visiting building.

Interior office space is not presentable or professional in appearance. Partitions and walls in areas visited by the public are in poor condition, and lighting and ventilation are insufficient for a pleasant, efficient, and effective working environment. There is not even a working water fountain on the floor.

Document storage is disorganized. Although the office staff appear to be able to work with the files as they are, this requires "institutional memory," and it is unlikely that a person temporarily assigned to the EMSB offices would be able to locate needed records with any degree of success or efficiency. Files are scattered in various rooms, with limited (or no) security from the scrutiny of unauthorized eyes. There is a shortage of storage space and file cabinets, which results in numerous documents being held in temporary boxes.

The Billing Unit lacks modern office automation capabilities. There are a few old stand-alone desktop computer systems, but they lack the capacity to perform substantive data processing or EMSB-related analysis. Staff members utilize computers for limited word processing in the production of letters and memoranda only. The scanners used by the staff previously to automate document processing are broken and unusable. Appropriate maintenance and/or replacements were requested by staff, however, due to budget shortfalls those requests were placed on hold. Hence, there is currently no means of automating any of the documents used in EMS billing office. Finally, there is an inadequate amount of suitable furniture for the EMS billing unit. The furniture is antiquated with insufficient room or seating for office visitors.

Little/No Injury EMS Public Prevention Education

Preventing illness and injury before they occur is the best way to ensure that the health and safety of the public is safeguarded and that an EMS system isn't overloaded with calls. Teaching the public how to avoid the need for EMS and how to get the service when it is needed has become accepted as a critical mission of fire and EMS departments.

There is only one person dedicated as a public fire educator, far too small staff for traditional fire safety education let alone injury prevention.

TriData became involved with the FEMSD several years ago on a FEMA/DOT sponsored public education project entitled *Make the Right Call*. This program is directed toward teaching the public when to call for help (and when not to), how to call for help, and what to do until help arrives. It is an excellent program, having won awards from a number of organizations. Personnel from the EMSB have volunteered their time to present this program throughout the District; however, the program and the EMSB volunteers have received little official support from the department.

Vacancies for Field Positions

There are presently 20 vacancies at "Basic Paramedic" level and seven vacancies at the EMT level. This forces EMS units to be "back-filled" with overtime personnel. While it may be cheaper to use personnel on overtime (to an extent) because extra benefits are not required, it is a bad practice to rely too heavily on overtime personnel, for a number of reasons. First, personnel need days off to see family, raise children, and accomplish personal chores. Second, personnel need days off to recuperate from the stress (emotional and physical) of being on duty. Finally, personnel who work too many consecutive hours make clinical errors. Excessive reliance on overtime can jeopardize patient safety.

It is unclear why these vacancies exist when there are promotable paramedics occupying EMT slots, as well as requests from EMTs in both the EMSB and the FFD to attend paramedic classes.

Lack of Computer Maintenance

During the previous the Medical Director's tenure, there was a sizable investment made in computers and other technology to improve the efficiency of the EMSB. Unfortunately, the maintenance contracts on the data processing equipment have been allowed to lapse. Much of the acquired equipment has fallen into disrepair, and without maintenance contracts in place, has languished in that state.

For example, the scanning equipment used to read data off the completed EMS run sheets (FD form 151) is inoperable. The vital data contained on those forms are not being abstracted. This has a downstream effect of making quality assurance more difficult, inaccurate, and time-consuming. Additionally, information is not being transmitted automatically from the run sheets to Lockheed IMS, the EMS billing contractor. The effect of this is can be measured in terms of dollars which go uncollected.

Communications Are Not Consistently Professional

TriData personnel spent a good deal of time monitoring EMS radio communications over the past few weeks. Overall, radio communications procedures and discipline need to be improved. Field units and dispatchers were heard being discourteous to each other, displaying sarcasm and unwarranted editorializing during transmissions.

Individual transmission lengths are too long. Too much unimportant information is being transmitted (both from the dispatch center and from the field), and frequently important pieces of information are lost in the process.

There is no uniformity of dispatching. Each dispatcher dispatches units according to his or her own particular style. Some dispatchers use the Medical Priority Dispatch codes (e.g., "27-Delta-1"), while others use plain English (e.g., "Stabbing or Gun Shot"). Some dispatchers use the old "Code 1/Code 2" system, while others refer to them as "Priority 1" or "Priority 2." This inconsistency is confusing and unprofessional.

Medical Priority Dispatch

Medical Priority Dispatch (MPD) is currently being performed using a set of cards instead of the computer-assisted version that is considered necessary for high-volume cities such as D.C. According to staff at Medical Priority Consultants (the group that assists with MPD implementation), the MPD project was never completed. These are two main reasons why this hampers EMS delivery.

First, there is a much higher error rate associated with the card system than with the computer-assisted system. Assuming that the MPD quality assurance statistics are correct, for the month of August 1997, 175 calls received at the 9-1-1 center were under-triaged (i.e., were categorized as being less serious than they actually were); 350 calls were over-triaged (i.e., were sent ALS responses when a BLS response was warranted). Second, the cards are much slower than the computer-based version. Tracing the correct sequence through the cards is done on caller answers to medical interrogation by the call-

taker. This requires flipping from card to card, sometimes in a confusing sequence of forwards and backwards.

Oxygen Supply Problems

According to EMS managers and field personnel, oxygen supply is a regular problem. Oxygen is essential on every EMS unit. It is the primary treatment modality of both EMTs and paramedics. EMS units which run out of oxygen cannot deliver even minimal BLS care and must be placed "out-of-service" until more oxygen can be found. Resupply frequently entails driving from station to station in a search for oxygen. This is wasteful and dangerous. A TriData analyst monitoring EMS radio communications heard an EMS supervisor order an ambulance that had been out-of-service due to a lack of oxygen to go back in service while it attempted to find oxygen. That unit could have been dispatched on a call which required the administration of oxygen. Lack of oxygen endangers the welfare of patients and places EMTs and paramedics in ethically questionable situations.

An adequate supply system should be implemented to ensure that such shortfalls do not occur. Safeguards should be created to prevent units from being dispatched without essential supplies such as oxygen.

Fuel Supply Problems

Similar to the oxygen supply problem is the fuel supply problem. EMS units low on fuel must often go from station to station searching for fuel. Lack of a centralized fuel reporting system means that dispatchers have difficulty advising EMS units where to refuel.

TriData analysts monitoring radio communications heard several instances in which the dispatcher asked a unit that was attempting to go for fuel to respond on an EMS incident. In such cases, the dispatcher would promise to remember that the unit needed fuel, and that the unit would be allowed to refuel after that run. While critical calls clearly should receive the benefit of an immediate response from EMS vehicles,

such responses are useless if a vehicle runs out of fuel idling on the scene of an emergency – or even worse, with a patient on board.

Most emergency service organizations have a rule (some formal, some informal) that fuel tanks not be allowed to fall below half-full. This provides a large (but not foolproof) margin of safety. To the extent possible, EMS units should monitor their fuel levels more carefully and head for known fuel locations well before the need for fuel becomes urgent.

Uniform (Clothing) Regulations Laxly Enforced

One of the most readily observable problems that plagues the EMSB (and the FEMSD in general) is the appearance of some of its personnel. Simply put, uniform regulations are laxly enforced – some personnel are sloppily dressed. There is too much latitude accorded FEMSD personnel in what they wear and how they wear it. This poor appearance undermines public perception of the department as a professional organization. Seeing firefighters and EMTs on duty with their shirt tails hanging out, shirts unbuttoned, and baseball hats worn backwards speaks volumes about the department. In many fire departments or emergency medical services, personnel who wear their uniforms as done in FEMSD would be directed to sharpen their appearance, reprimanded, or sent home without pay. Emergency service personnel from other departments have commented on the shoddy appearance of DC's personnel – something which gives the FEMSD a bad reputation in the emergency response community.

Poor appearance has a second bad effect. It serves to exacerbate the differences between FFD and EMSB personnel. The EMSB uniforms are the same as the FFD uniforms, and firefighters will be inclined to complain because of the impact on the public's perception of the department – even when they, themselves, are not always in uniform.

Medical Protocols

The complement of medications carried by EMSB paramedics is below par for the area. For example, paramedics in all the surrounding jurisdictions are authorized to administer morphine, Valium, and adenosine, whereas these medications are not within the scope of practice for D.C. paramedics.

It seems unjust that someone suffering a heart attack on the east side of Western Avenue should receive care that is sub-optimal *by design*, while someone suffering a heart attack on the west side of Western Avenue would be afforded better care. Where clinical practice is clear-cut (as with the three medications mentioned earlier), the patient is better served by assuring comparable levels of care with surrounding jurisdictions. Where the efficacy of treatment is questionable or procedures are inherently risky, the scope of care should be debated and decided by the Medical Director and the medical community.

Count of EMS Calls

The computer-assisted dispatch system counts EMS calls in a manner which is not employed by any other emergency service agency with which we are familiar. The program counts each piece of apparatus sent on a call as a "medical response." For example, when an ALS medic unit responds to assist a BLS ambulance, that counts as two medical responses. Every other EMS system we have seen would count such an incident as a single call, irrespective of how many different pieces of apparatus respond to that call. This means of counting has the effect of inflating the data on EMS call volume, rendering them less useful for benchmarking comparisons. (Note that it is appropriate to count the response of each vehicle on a call when assessing unit workloads.)

Quality Assurance

Quality assurance (QA) is an integral function of the EMSB, as it is in any medical care delivery system. For medical, moral, and legal reasons, it is vitally important that the department be able to guarantee that medical care meets accepted

standards of the profession and the local medical community. The only way to do this is to have constant medical oversight.

QA is ultimately the responsibility of the Medical Director; however, it is carried out on a day-to-day basis by eight EMSB personnel assigned to the Training Division's Quality Assurance Office on a full-time basis. The QA system in place for the EMSB seems to operate reasonably well. The data gathered and reported are useful, but there is substantial room for improvement in the realm of efficiency.

Chart Review Process – EMS call reports (FD form 151) are reviewed on a daily basis by two teams of QA evaluators. A set of 250 run forms randomly selected by workers at the EMSB billing contractor, Lockheed IMS, are used for the overview. A sample of reports filled out by firefighter/EMTs (FD form 902) are reviewed from a weekly pool of 150 forms randomly selected by Lockheed, as is all documentation on the use of automated external defibrillators (AEDs) by FFD personnel. Additionally, all run forms from the rapid response units and special documentation on incidents involving intubations, AED usage, cardiac arrests, and presumed dead on arrival are examined.

The review and data abstraction is done by hand, and accounts for about half of each QA evaluator's day. This is inefficient, especially since the FD form 151 is scannable. The data could be abstracted by computer. Unfortunately, as noted earlier, computer maintenance contracts have been allowed to lapse and many computers are in a state of disrepair. This includes the equipment needed to scan the FD form 151. Were the data to be abstracted and analyzed by computer, QA evaluators could be freed up to spend more time in the field working with the EMS providers. This might also obviate the need for the administrative assistant currently being requested by the Lieutenant in charge of the QA office.

No QA Oversight of FFD Personnel – Although the QA office reviews copies of FD form 902, which of filled out by firefighter/EMT first responders, there is no meaningful QA oversight of the FFD personnel. A representative of the FFD attends the department's monthly QA meetings, but there is no person dedicated to QA activities for the FFD.

In addition to presenting a problem in terms of ensuring the quality of clinical care rendered, lack of QA oversight of the firefighters reinforces the perception that firefighters play by a different set of rules than the EMS personnel. For example, in order to be “checked out” as one of the two EMTs on an ambulance crew, civilian EMSB personnel must undergo an apprenticeship. During this time they ride as the third person on an ambulance and render care under the observation of a senior EMSB EMT. Once the senior EMT is convinced that the new person is ready to be checked out, an EMS supervisor will evaluate the trainee. Upon demonstration to the EMS supervisor of adequate proficiency, that person is then “checked out” to ride as part of a two-person crew.¹³ No such check-out procedure exists for FFD EMTs – either to function as the lone EMT on an engine company or to fill vacancies on an ambulance. If the firefighter has a valid District of Columbia EMT card, he or she is presumed to be proficient.

This situation presents QA questions when FFD EMTs fill vacancies in the ambulance staffing. While utilization of the firefighters on the ambulances helps ensure that more ambulances are available for emergencies, there is nothing to ensure that the assigned firefighters have been adequately prepared for ambulance duty. For instance, firefighter/EMTs reportedly do not receive formal training on the EMS “protocols” – the set of standing orders that govern pre-hospital emergency care. Such training is required of EMSB EMTs.

There appears to be no formal means by which a firefighter/EMT can be prohibited from practicing as an EMT short of having the person’s EMT card revoked by the issuing authority, the Office of Emergency Health Services. Because the QA office maintains no formal authority over the FFD EMTs, it is essentially powerless to investigate complaints beyond the cursory level. TriData was informed that of the three complaints brought to the QA office about care rendered by a firefighter, none has been officially closed (i.e., there had been no resolution or follow-up to the case).

¹³ One failing of this system is that there is no formal, written documentation added to the individual’s employment file indicating that he or she has been certified by the EMS supervisor to work as an ACA (active crew assigned) on an ambulance. Such documentation exists at the paramedic level.

Critical Incident Stress Management

The nature of the incidents to which FEMSD personnel are exposed can cause problems that closely resemble Post-Traumatic Stress Disorder (the syndrome to which battle veterans are subject). Emergency responders know this stress as "critical incident stress." Much has been written on the subject, and critical incident stress management (CISM) has emerged as a means to deal with it. Provision of CISM is an accepted practice in most modern emergency response agencies.

According to EMSB personnel, the critical incident stress team in the FEMSD has been allowed to languish. Some personnel did not even know one existed. As alluded to earlier, when a well-respected EMS supervisor died at work at Christmas last year, a stress debriefing was conducted using a CISM team from Virginia because it was felt there was inadequate capability within the FEMSD.

Quick Fixes

There are a number of suggestions that might be quickly implemented to solve some of the problems discussed above. Some examples:

1. Contract for Oxygen Supply Tanks

EMS units have difficulty keeping supplied with oxygen. Anecdotes abound about units having to go to several stations before finding oxygen tanks.

A maintenance contract could be established with a local compressed gas company to exchange the large tanks in the cascade systems and on EMS units on a regular basis.

2. Enforce Uniform Regulations

Strict enforcement of uniform regulations is a no-cost solution that could be implemented immediately. In addition to creating a more professional, confidence-

inspiring appearance for all personnel (not just EMSB personnel), the department would be sending a strong message to the public, its employees, and sister organizations that it is taking steps to reform its operations and service delivery. Looking sharper would simply be the first outward manifestation of the renewed department.

3. Require Crews to Respond Equally Quickly to Fire and EMS Calls.

Both medical and fire calls should be responded to with the same vigor. Both types of calls are subject to false alarms, but when a real emergency occurs, a speedy response could mean the difference between life and death. Furthermore, an unexplainable delayed response could leave the department open to liability, especially if a trend in that respect could be demonstrated.

CHAPTER 5 – FIREFIGHTING

The firefighters in the fire stations are assigned to the Firefighting Division, which reports to the Assistant Chief for Operations, who also directs the Training, Prevention and Communications Division. This chapter discusses firefighting operations. The other functions are addressed in different chapters.

Organization

Reporting to the Assistant Fire Chief, Operations are the four Deputy Fire Chiefs, who direct the Firefighting Division, one on each of the four shifts. In addition to administrative and training responsibilities, the Deputy Chiefs assume command at major fires and other emergency incidents unless relieved by the Assistant Fire Chief or the Fire Chief. The Deputy Chief on duty supervises six Battalion Chiefs located throughout the City. Each Battalion Chief oversees a group of fire suppression units or companies. The ambulance units assigned to fire stations do not fall under the direct authority of the Battalion Chiefs, but rather report via EMS supervisors through the EMS chain of command. The same is true of EMS personnel assigned to fire stations.

Some of the engine companies stationed in Washington, DC are among the busiest in the entire United States in terms of number of responses (fire and emergency medical service). This represents a unique situation and one in which subtle policy changes can have significant impacts on the company level.

The fire suppression personnel are assigned to engine and ladder companies, heavy rescue squad companies, a Hazardous Material Unit, fireboats, and foam units.

Response Assignment

On a reported structure fire the basic response is four engine companies, two ladder companies and a Battalion Chief. Additional help is readily available if needed and is dispatched sequentially. The second alarm has a designated complement of units, as well as the third alarm and so on.

Upon arrival at the fire, predetermined assignments are followed. The companies split their response between the front and rear of a building reported to have a fire. This response pattern originated to deal with row-type structures with limited front to rear access and the need to cover all sides of the building quickly. This policy is reasonable based on the District's building stock. The first arriving engine company covers the front of the building, the second takes the rear, the third engine backs up the first, the fourth engine backs up the second. The first ladder company responds to the front and the second ladder to the rear. This is a system that has been in place for many years and has worked well in the District of Columbia. It is a larger than average response to a dwelling fire, but appropriate for DC's conditions in many areas of the city.

A potential area for improvement is the undifferentiated nature of response sent to reported fires. The response is the same throughout the District, regardless of the type of structure involved. That is, the same response is given for a downtown high-rise as for a single family detached dwelling. This policy is defended by senior staff as a means to saturate fires with personnel in the early stages, subsequently preventing excess loss and the need to call for extra alarms. Also a factor was the change from the "two piece engine companies" where each engine company responded with a second pumper to provide water supply from the hydrant. The change to the "single piece" engine reduced apparatus response, and management is cautious about reducing responses further. This policy will be an area of continued review with respect to the company workload and effectiveness implications.

On unusual emergency responses such as chemical or hazardous material spills, confined space or high angle rescue rescues or building collapses more specialized units are dispatched. The Department has three Rescue Squads and a Hazardous Materials Unit. The Department also has two Foam Units that are used on a regular basis for Presidential and Vice Presidential helicopter departures and arrivals on the grounds of the White House.

Special Operations are now coordinated by a single Battalion Chief who reports to the Assistant Chief for Operations. He coordinates services involving the following technical areas:

- Metro Operations
- Rail Operations
- Hazardous materials operations
- Confined space rescue
- High angle rescue
- Foam unit operations
- Fireboat operations
- Terrorism preparation

The organization of Special Operations under a single chief-level officer is a very positive step towards the efficient delivery of these services. Special operations are the least called for emergency dispatches yet pose the greatest danger to emergency responders and require the highest levels of technical skill and competence. The Special Operations functions are discussed in detail in Chapter 6.

Staffing

After a long period of relatively stable staffing levels, the firefighting division has undergone considerable downsizing in the last ten years, including reductions in staffing of both engine and truck companies (twice), the abandonment of the two-piece engine company concept, the elimination of Battalion Chief's aides, the elimination of two battalion districts, and the closing of companies. The impact of these reductions is still being felt and came up frequently in interviews. The firefighting procedures and experience of the District of Columbia is still adjusting to these changes in the basic staffing and configuration of companies. Policies and procedures and overall effectiveness have not been formally reviewed since these reductions were implemented.

At the present time, staffing of units is mandated by the Rules and Regulations Manual. That is, each engine and truck company must respond with an officer and three

firefighters. The Rescue Squad, the Hazardous Materials Unit and the Fireboat are all staffed with an officer and four firefighters. The Fireboat has special ranks for piloting and engineering, but the number of staff still totals five. The Foam Unit responds with one individual backed up by other suppression units. The staff of engines and ladders meet the national minimums of what is considered adequate. (Staffing of Special Operations is discussed in Chapter 6.)

Chief's Aides – At one time Battalion Chiefs had aides. These individuals not only drove the Battalion Chief, but acted as another set of eyes on the fireground and did administrative duties as well. They also assist in running the Incident Command System at emergencies. Budgetary constraints caused the Department to eliminate this position at the battalion level; the Deputy Chief has retained his aide. Although this position does not drive the Deputy Chief, it is tasked with responding with and assisting in operating the command post vehicle at extra alarm fires or special incidents.

Incident Command System – There is a question of how well the department is able to implement the Incident Command System, a philosophy which has helped enormously in improving accountability on the fireground, and which is credited with reducing the potential for injury to personnel, as well as better managing emergency incidents. The DCFEMS developed its first true standard operating procedure and general training on ICS last year. This was considerably behind the national trend. Some of the Chief officers we interviewed viewed the new policy as a formalization of “what we’ve been doing all along.” Despite such comments, the ICS is a major change for the DCFEMS, and like any change, will take time. Compliance is bound to be inconsistent in the early stages, and is. Continued diligence in enforcing this policy and additional training may be required. Our impression is that the ICS is not always used at routine incidents, where its impact is less obvious, and that leads to difficulty in implementing it effectively on large incidents when the officers are not used to using it every day. For ICS to be effective on major emergency incidents, it must be a continuation of day to day standard operations.

Adoption of and compliance with a recognized incident command system is critical to interaction with neighboring jurisdictions at major incidents as well as being critical to liability avoidance for the City.

Overtime Expenditures – High overtime costs are a major concern to the Department. While some overtime is good for efficiently smoothing out variations in scheduling and leave without hiring extra personnel, the Department has built-in constraints that force overtime to be high. A large portion of the overtime budget that is charged to the firefighting division is driven, to a great extent, by other functions. Those functions include: 1) filling some EMS positions with firefighters on an almost daily basis; 2) substituting firefighters for communications dispatchers; 3) filling departmental vacant positions; 4) filling positions held by members on extended Performance of Duty leave who are not allowed to retire on disability; and 5) utilization of suppression forces to fill or support a number of fire department activities.

In order to reduce expenditure on overtime, all of these items must be addressed. In looking more closely at the overtime problem with all its complexities, it might be worthwhile to go back to square one and determine if current funding of the Department is realistic considering the required number and types of authorized positions (FTEs) in the Department.

In the fire service as with other around the clock operations, a "staffing factor" is determined and used for budgeting purposes. For instance, it takes four firefighters to fill one 24-hour duty tour on a 4-platoon system, but more than four when substitutes for assigned days off and other leave is provided for. On a 4-shift system, the factors will be in the 5+ range, meaning you need 5+ firefighters to fill one position for a 24-hour tour of duty. It was reported (by the CFO) that the current staffing factor in the Department is 5.48 for suppression personnel. You also need to determine the staffing factor for the entire Department including EMS, dispatchers, staff workers and clerical support personnel and fund that as well. (EMS staffing functions have not yet been developed since change to the FLSA rules – a problem in formulating budgets and managing those positions.) Only when these factors are determined and applied will you know whether or not you have allocated enough funding to support the effort. This is a process that

must be periodically updated, and this would be an ideal time to review the matter. The minimum daily staffing levels of the department and the leave impact factor should be documented in the budget preparation justification. The budget has been formulated more by allocation of a mark from the top than from the bottom up. The result is high overtime to fill in for lack of adequate budgeting of FTEs in the first place.

One response in the recent past to the budget problem contributed to by overtime was the rotation station closure program. This approach has now been discontinued, but ran during most of FY96. In order to avoid the political fallout that follows the closing of a fire company, the City Council elected to spread company closures citywide thereby sharing the burden among the various neighborhoods. They mandated that eight companies throughout the City would be closed each day, the Department to decide which ones. Closing eight companies a day reduced, but did not eliminate the need for overtime, and the net effect was that there were eight fire companies not available for service each twenty-four hour period, thereby diminishing overall fire protection for the City.

Disability – Another avenue that should be explored is reduction in the extended disability leave. When members sustain on-duty injuries that preclude them from ever returning to full active duty status, based on medical evaluation, they are placed on the "POD" (Performance of Duty) list. While on this list their benefits continue to accrue and they enjoy any pay raises granted their rank, along with enjoying the tax breaks offered relative to disability income, and earning additional vacation and sick leave that the city will eventually pay for. In addition, the City pays all medical expenses related to their particular debilitating injury. This situation is so rewarding that there is no impetus for the individual to leave the Department and go out on disability pension. Compounding this is the fact that there is a joint police/fire cap on the number of members hired pre-1980 who can retire on disability each year, regardless of how many are injured. In the past there has been some relief by way of special exemption, but the critical point is the situation is that each one of these individuals is filling a position budgeted for a firefighter but is not available to work. The end result is that this frequently causes the Department to resort to overtime pay in order to staff fire units. A more economical procedure should be sought.

Robbing Peter to Pay Paul – The DCFEMS, adjusting to the budget reductions in 1986 from \$101 M to \$73M, gave priority to maintaining the emergency response services, which was the departments' primary mission. This DCFEMS reassigned personnel from support services to the Firefighting Division to maintain essential operations. The resulted in the reduction of staff in the Training Division, Communications, Prevention, Maintenance, and most other areas of the department.

The reduction of staffing in essential non-emergency divisions has contributed to the deterioration of the Department's infrastructure, including fire apparatus, facilities, and other support services. It is now recognized that the neglect of essential non-emergency services has impacted on emergency service delivery because fire equipment is not dependable or disabled, and unavailable for response.

The reassignment of much support staff to the Firefighting Division created additional problems. Divisions such as Communications, Training, and EMS must be staffed for the Department to function, so the Firefighting Division has become the staff pool drawn upon for employees to assign to other divisions on temporary duty.

It must be recognized that to keep an emergency response agency the size of DCFEMS, essential non-emergency support services are just as important to the ability of the department to function as hands-on service delivery.

Apparatus

There are a number of major problems about the firefighting apparatus. The apparatus replacement program, or lack thereof, is a major and long-standing weakness in the DCFEMS. The blame for the present situation can lie both with the District government for failing to adequately fund an apparatus replacement program and the DCFEMS for a history of poor management and performance of apparatus repairs and planning. Deficiencies were noted in every respect of the apparatus program. In fairness to incumbent managers, many needs are well-known, and requests for assistance are documented. Until the last two years, the apparatus maintenance function was under the

direct authority of a Deputy Chief. This position was recently downgraded to a Battalion Chief. Despite the high-level oversight, the poor results speak to a legion of systemic problems both within and outside the Apparatus Maintenance Division and a history of ineffectual management.

Record Keeping – There is a crying need for computerization of apparatus records. Critical information on unit in-service time is essentially unavailable since it is not recorded in a computer database. Almost all key documents are filled out by hand and kept in paper form. There is no computerized apparatus or fleet maintenance software that could track repairs and maintenance expenditures by apparatus, mileage, and age. A computer network is scheduled to be installed, but progress has been very slow. Automation in processing of work orders, parts inventory, and analysis is badly needed. Given the critical nature of apparatus problems, high priority should be given to implementing a maintenance MIS and the staff support needed to get the record system running with data back to the beginning of the fiscal year, at a minimum.

Reserve Apparatus – A reserve apparatus by definition is one that replaces another in need of repair or service in order to insure continuity of service. This department has no reserve fleet to speak of. While their vehicle inventory shows some reserves, in reality there are none functional. Attesting to this fact is the almost daily need to shut down fire companies simply because there are no replacement vehicles. A reserve fleet must be created and maintained to the point where no unit has to be placed out of service due to mechanical difficulties. There are generally accepted fire service guidelines for the ratio of front line fire vehicles to reserve apparatus. The National Fire Protection Association (NFPA) recommends that the number of reserve apparatus be 25-33 percent of the number of front-line vehicles. Consideration should be given to exceeding these general guidelines due to the extreme wear and tear caused by the high number of responses made by several of District of Columbia units, the poor condition of the street network and the current poor condition of the fleet in general.

Fleet Age and Reliability – A related area of concern is the state of the Department's vehicle fleet in terms of age and reliability. An aging fleet will obviously demand more service and maintenance. As the fleet has aged, the demand placed on the

apparatus in terms of response workload has increased. This dictates increased maintenance expenditures. Historically, the Department had a viable apparatus replacement program but due to budgetary considerations and/or adjustments it was not fully implemented and even ignored. Recently there has been attention to funding replacements, but a reasonable, long-range apparatus replacement plan remains to be developed if the District of Columbia is to solve or remedy this problem. It is likely that acute needs for apparatus will persist for several years even under an ambitious replacement plan. Emergency action to obtain equipment may be necessary. Leasing or rental might be considered to meet short-term needs. (The ambulance fleet will be addressed in the EMS Chapter 4: it now does have a reasonable replacement plan.)

Vehicle Maintenance – Yet another area in need of redress is the extended out-of-service time a number of vehicles experience for maintenance. Initial inquiry into this problem produced simply incredible findings. The steps in the procurement process for routine repairs, the lack of preventive maintenance, and the limited capability of some of the mechanics in the maintenance division combine to produce long delays in returning vehicles to service. Turnaround time for a purchase order was often in excess of 50 days, according to department records. No improvement has yet been noted since reforms in procurement associated with the Authority have been in place. Part of this problem is due to suppliers who will not give credit or only limited credit to the District of Columbia due to past poor performance in paying bills.

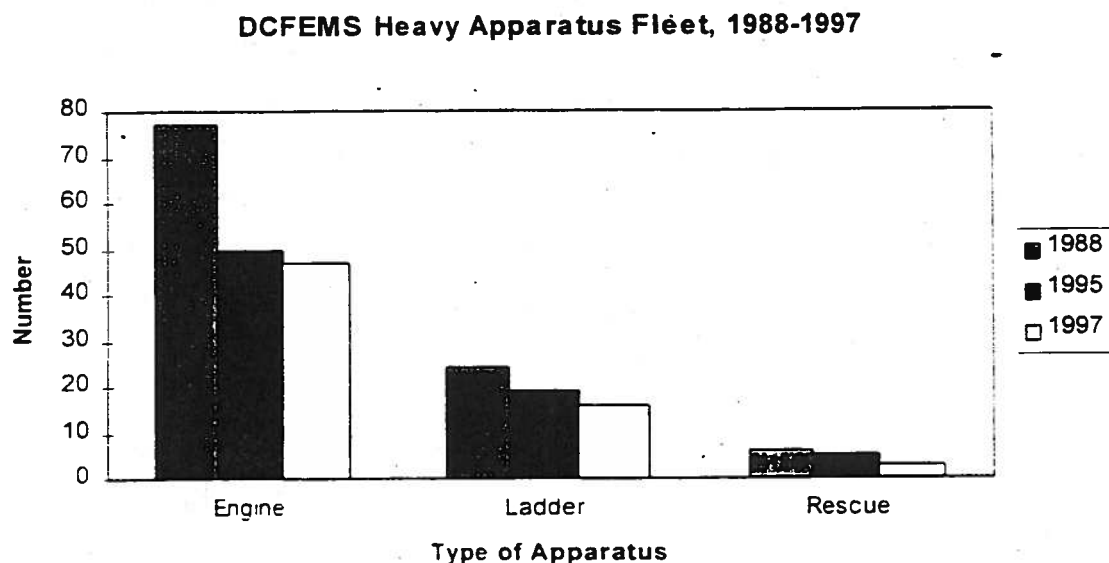
As an example of excessive delays in repairing apparatus, Truck 3 went to the shop on January 30, 1996 and remained there until July 7, 1997. Regardless of the extent of actual repairs that this vehicle needed, this time span is inordinate and should be considered totally unacceptable. There was no Truck 3 for seventeen months. Its personnel were utilized to fill in elsewhere, but that is hardly a good solution to the overtime problem.¹

Another key issue to bear in mind when evaluating the apparatus maintenance function is the reduction in the size of the heavy apparatus fleet. From 1988 to 1997, the numbers of engines, ladders, and heavy rescues fell from 107 to 66 units (See Figure 5-

¹ The importance of this reduction in coverage of Truck 3 remains to be determined.

1).² This was primarily a result of the abandonment of the second pumper used in the two-piece engine companies and the general depletion of the fleet's reserve apparatus. At the same time, the staff for the Apparatus Maintenance Division (AMD) was reduced only slightly. What should have been an improved environment for maintenance – a smaller fleet – did not result in improvements. The continued deterioration of the fleet and the persistent complaints of the limited capability of in-house mechanics are cause for extreme concern. The current Chief in charge of the AMD is reporting some success in enforcing standards of the District Personnel Manual on problem employees, but this is a time-consuming process not likely to bear direct improvements in the near term. (This issue is further discussed in Chapter 9, on Services.)

Figure 5-1.



Vehicle Accidents – Another contributing factor to the extensive out-of-service time for apparatus is motor vehicle accidents. These accidents range in causes from striking stationary objects to failure to obey procedures for vehicle operation, causing damage to the vehicle. In several cases, fire department apparatus have struck each other, taking two pieces of apparatus out of service. While identification of reforms is the next

² Analysis of DCFEMS Vehicle inventories.

phase of the project. it is clear that additional driver training is needed within the Department (a potential quick fix). Fire apparatus operators receive initial training in the Fire Academy (30 hours). This training covers driving of engine companies and tillering of ladder companies. There is little or no training on vehicle operation or preventive maintenance. Training continues on-the-job, whereby new firefighters practice driving and vehicle operation under the supervision of their company officer. Eventually the driver is cleared to drive to emergencies. A formal written and practical testing process for the position of Technician is given at the Training Academy. (Agreed to in September through collective bargaining was the initiation of an independently certified vehicle operators training program in the near future.)

Licensure is subject to the laws of the home state of the firefighter. Of the metropolitan jurisdictions, only Maryland requires special licensing for operation of fire apparatus. The lack of computerized records makes a study of safety versus the licensing status of the operator very time intensive.

Nonetheless, there clearly appears to be an accident problem within the Firefighting Division. There were reports that many accidents result in no penalty for the operator. This is both an operational and a liability concern for the Department. The trend in accidents is shown in Figure 5-2. Table 5-1 lists the 1996 apparatus accidents by type of apparatus.

Figure 5-2.

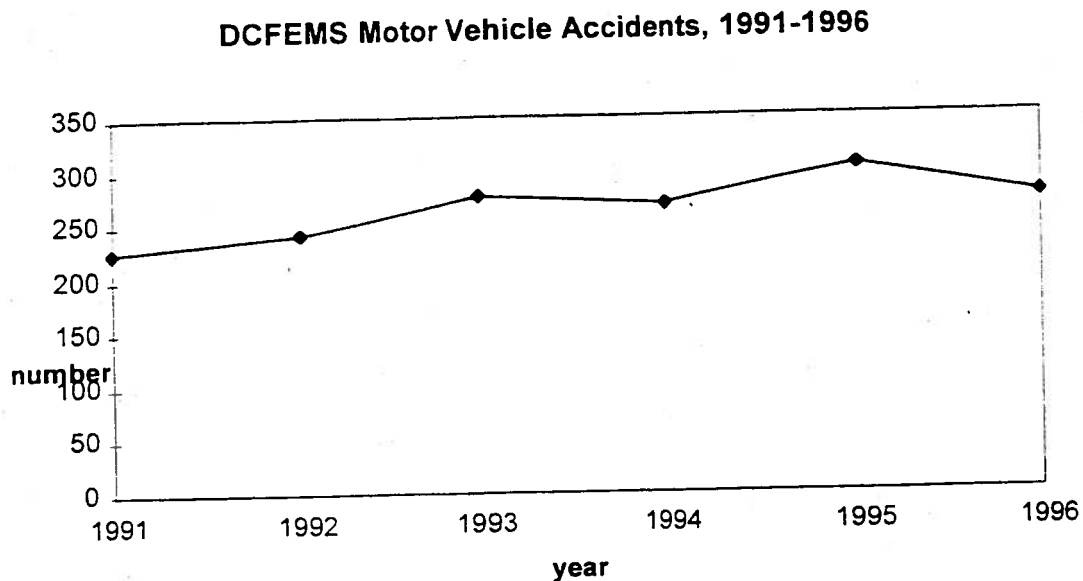


Table 5-1. DCFEMS Apparatus Accidents by Type of Vehicle, 1996

Vehicle Type	Number of Accidents
Passenger Vehicles (EMS Supervisor and Chief Officers)	20
EMS units	105
Engines	86
Ladders	40
Rescue	8
Other Divisions Vehicles	15
Total	274

Response Times

An extremely critical aspect of fire suppression is response time. That is the elapsed time between when a call for help comes into the communications center, and the time fire suppression units arrive on the scene of the emergency. The primary factors that determine response time are the number and location of fire stations throughout the City. A first-order analysis indicates that the present deployment of engine and truck

companies provides reasonably adequate coverage of the District of Columbia. However, based upon a number of interviews and initial observation and evaluation by TriData team members, some modifications in the location of selected fire suppression units appears to be worthy of more in depth study.

A detailed study of station and unit location (the RESO study) was undertaken in-house two years ago by an operations researcher attached to the Department. This study was predicated on a cutback scenario in which the number of companies was to be reduced to meet a potential major budget reduction. Despite what appears to be a valid methodology, the study does not have the confidence of the Department and its validity is widely perceived to be questionable. A full review of this study would be worthwhile. (It cannot be done in three weeks.)

A review of actual response time statistics for each firefighting company reveals a number of contradictory trends. The portion of response times from dispatch to arrival on scene increased by an average of 30 to 45 seconds for fire calls from FY94 through FY96, but appear to be returning to their 1994 levels in FY97 YTD.³ Average response times from call to scene, which include call processing time by communications personnel, appear to be increasing for fire/rescue (mainly EMS) calls, and staying stable for structure fires. This indicates that call processing for EMS calls has slowed by about 40 seconds over this period. Reports by company and platoon for August 1997 are inconclusive. Further research and verification will be necessary to assure that this data is valid. At present, discerning trends from variations caused by communications procedures, local idiosyncrasies in response areas, and differing reporting criteria over time is difficult. (This is a major area for follow-up in subsequent tasks.) There are some large variations in the response time for the same company between platoons, as well as some data that looks shaky (e.g., a "6:60" response time for E26).

Fire Stations – Firefighters reported – and we saw – numerous deficiencies in the state of station repair. Leaking roofs, inoperative air conditioning and burned out lights were common. Poor ventilation of vehicle exhaust fumes are the rule within the Department. In many cases, station maintenance has become a function performed by on-

³ Historical Summary of Fire and EMS Demands for Service Dated 9-8-97.

duty firefighters at their own expense. Repairs of all kinds of Department facilities have been delayed or neglected to the point where living conditions in some stations approaches the unacceptable. This came as no surprise, as reports provided the project team included an extensive inventory of needed or pending repairs and/or upgrades to fire stations and other Department facilities. Firefighters should not be expected to make station repairs to the extent they do now. They are only doing them in the interest of self-preservation as opposed to comfort. A case was cited where portable electric heaters were used to heat the station for a long period due to an inoperative permanent heating unit. Something must be done and done soon to address this continually deteriorating situation.

Many recent lighting problems in the station and other departmental facilities were attributed to long-life energy-efficient fixtures installed recently by Pepco. We understand that these fixtures malfunctioned within months of being installed. While this might seem a minor issue, it is a major aggravation to personnel and creates a safety hazard at the same time. It is hard to believe that Pepco is unable to assist the DCFEMS in offering some form of correction for this project gone wrong.

Station Supplies – Station supplies is another area suffering from long term delay and/or avoidance. If firefighters are expected to spend a twenty-four hour shift in a building, that building should contain the basic amenities. Firefighters should not have to be pleading for toilet paper, paper towels, cleaning materials and many similar items. There is a long standing problem in getting timely processing of orders for supplies and equipment. A more responsive approach to this supply need must be developed and implemented.

Underground Storage Tanks – There are a number of underground fuel storage tanks and related piping associated with fire department facilities that must be removed, rendered inert or upgraded by December 1998 as directed by the U.S. Environmental Protection Agency. While the Department has not been officially cited, it must comply by the deadline imposed. There is no alternative to full compliance. A serious inter-departmental concern arose when estimates for doing this job were considered. The Department of Public Works indicates that they need \$1,000,000 to do this work, but the

Fire and EMS Department received independent estimates to do the same work for \$340,000. The \$1,000,000 cost, if paid to the DPW, would be charges against the fire department's funding. Consider what the department could do with the \$660,000 savings realized by contracting out this work.

A number of specific DPW overcharges similar to the one cited about surfaced during our interviews. The estimate given by DPW to remove three tanks from a particular fire station was \$65,000. The higher of two independent bids received by the Department for the job was \$11,126. The disparate dollar figures suggests a systemic problem or deficiency that merits further review. In another case, the DPW charged the Fire Department for many more hours than they spent doing a job at a station. The ability of the Department to contract with outside firms to do maintenance must be strengthened.

Computer Support at the Station Level – A clearly identified shortcoming in the Firefighting Division, as in the whole Department, is the absence or inadequacy of computer capability. It was singled out as a hindrance in almost every station interview conducted, and considered a serious obstacle to efficient performance and data collection. Fire station personnel complained of having to type or write by hand a variety of departmental reports. As an example of archaic and duplicative practice, information is retained by the companies on EMS calls in a handwritten logbook, a computer response report and a handwritten EMS incident report. This does not reflect the actions of a fire department that desires to be "world class."

Personal Protective Equipment (PPE)

There is no ongoing protective equipment replacement program within the Department. Firefighters report they have gear that is in need of replacement, as confirmed by a Battalion Chief inspecting that gear, but no replacement gear is available. Many firefighters continue to use defective or worn out equipment in spite of its questionable serviceability and safety. Some go out and buy new gear on their own. This is a major area of concern for personnel safety and a serious liability exposure for the District Government.

A second critical protective equipment issue is that the testing of the compressed air cylinders used on self-contained breathing apparatus is way behind federally-mandated inspection and testing schedules. While probably not an acute hazard, this situation should be brought into compliance with legal requirements as soon as possible. Similarly, the maintenance program for the Department's SCBA should be audited for compliance with manufacturers and regulatory requirements. Improper maintenance has been identified in a number of SCBA failures leading to injury to firefighters in other cities.

Personnel Hiring

Fire personnel are drawn from an intake list based on competitive examination. They are then put through a basic training course, certified as Emergency Medical Technicians, and qualified to the Firefighter II level based on standards established by the National Fire Protection Association (NFPA). After serving a one-year probationary period and successfully completing an examination, they become full fledged Firefighter/EMTs.

The biggest concern with the current hiring process is the excessive amount of time that the list for firefighter hiring has remained active. In order to avoid the expense of administering a new test, the lists are allowed to remain in effect almost until they are completely exhausted. Offering employment to everyone who passes the entrance examination defeats the purpose of the examination's selectivity. The current list has been in use since 1989 – eight years.

Supervision

A Captain or a Lieutenant normally staffs all the engines, ladder companies and rescue squads. The Captain functions as a platoon supervisor and is responsible for the station and coordinating the three other platoons that are supervised by a lieutenant.

The department also has a Sergeant rank, which is a first level supervisor who is used within a battalion primarily to fill in for platoon supervisors on leave. The

Sergeants also are responsible for delivering in-service training for the battalions. We have reviewed the need for a sergeant position, something not used by most departments. (Few have all three ranks of sergeant, lieutenant, and captain). We have not reached a definite conclusion, but think that there are extenuating circumstances in the Department for use of this rank. It appears to be a reachable stepping stone for the advancement of some firefighters who might otherwise consider taking the step from firefighter to lieutenant as too formidable.

Emergency operations such as firefighting and rescue operations require adequate supervision for safety. The span of control in the Firefighting Division is one officer to three firefighters on engines and ladder companies and one officer to four firefighters for rescue squads and some special units. This span of control is consistent with appropriate supervision for fire and rescue emergencies.

Standing Watches – A relatively minor point – it was not evident why DC continues to have station personnel stand watch at night. It disrupts sleep needed on the many busy units. The watchperson often dozes. The units could be alerted by the dispatch system, phone, or other means.

Mutual Aid

The DCFEMS has traditionally not relied upon automatic mutual aid with surrounding suburban jurisdictions. (Automatic mutual aid is where the closest emergency units are dispatched regardless of jurisdictional boundaries.) The department has resisted mutual aid assistance except for specific incidents. All of the Washington Metro jurisdictions with the exception of DC have used automatic mutual aid for emergencies, with success.

The DCFEMS should reconsider automatic mutual aid with its surrounding jurisdictions. This could reduce response times and keep units available in the core of the city. The suburban departments are generally well equipped and receive or surpass the same national training standards used by DCFEMS. The surrounding fire departments

are nationally regarded and several are considered world-class, with units that have provided mutual aid nationally and abroad.

CHAPTER 6 – SPECIAL OPERATIONS

Special operations is a new section in the Firefighting Division created in August 1997 to coordinate the following technical operations:

- Hazardous Materials Operations
- Rescue Operations (including confined spaces rescue, high angle rope rescue, water rescue, collapse rescue and vehicle rescue)
- Metro Operations
- Rail Operations
- Foam Unit Operations
- Fireboat Operations
- Counter Terrorism Planning and Operations

The organization of the special operations under a single battalion chief is a very positive step towards the efficient delivery of these services. Special operations are inherently the rarest of emergency incidents, yet pose the greatest danger to emergency responders and require the highest levels of technical skill and competence to safely perform. The combined training of firefighters and the EMS Bureau personnel on Medic 17 and ALS 3 (an EMS supervisor vehicle) is an example of efficient resource utilization, and a model for cooperative and combined operations between EMS and fire in the fire department.

The role of this unit is excellent, but logically might include two more functions: 1) fire, EMS, and rescue services coordination for special events in Washington DC, such as marches, parades, and demonstrations, and 2) coordinating fire, EMS and rescue protection for dignitaries. The unique position of the President, senior members of the federal government and visiting foreign dignitaries place a special demand on the DCFEMS not shared by other departments. The coordination for these functions is currently split between EMS and Fire Operations. Coordinating the protection through a single staff officer in Special Operations will give law enforcement agencies a single contact point and increase the likelihood that they will pass on intelligence gathered on

threats that would require a response of special operations resources. (A problem in counter-terrorism and other protections.)

Budget – Provisions have not yet been made to provide this section with a budget. The Special Operations continues to function only on the basis of \$40-\$50K in grants from the Office of Emergency Preparedness and the assistance of federal agencies such as the U.S. Secret Service. The Special Operations officer should develop a budget plan for personnel, training, equipment and apparatus and should track actual expenditures. This will help serve as documentation for grant procurement for additional resources; documentation of costs recoverable from the federal government or others for special events and assistance to the federal government, as well as cost recovery for hazardous material incidents or other large incidents.

Mutual Aid in Special Operations – Procedures for the use of mutual aid resources should be more thoroughly developed. Large scale incidents often exceed the capabilities of one department. The DCFEMS needs to develop the procedures to call upon mutual aid resources for special operations incidents. Needed technical and hazardous material equipment is not available, hampering the ability to safely perform operations, such as a lack of up-to-date and intrinsically safe confined space rescue equipment, including supplied air breathing apparatus with an air cart, and monitoring equipment, as an example.

Apparatus

The Special Operations Division consists of three Rescue Squads (1-3), the Hazmat unit, E-12 (Hazmat), T-4 (Hazmat), E-15 (Collapse Response), Medic 17, and Battalion 1. All of these are fully staffed.

- The apparatus assigned to the rescue squads is in poor condition. Compounding that situation is the lack of a backup unit available when one of the rescue squads is out of service. Although the specialty units are not used as frequently as most other fire apparatus in Washington, they are still some of the busiest units in the country. When activated, they often operate on long

duration incidents. It is necessary that specialty apparatus receive prompt repairs, are replaced in a timely manner at the end of their service lives, and have a reserve unit available.

- The elements of the special operations need reliable support vehicles to transport rescue materials to the rescue site. The large amount of equipment necessary for technical operations is far greater than the amount that can be stored on any rescue squad vehicle. Each rescue squad therefore carries only enough equipment to start an operation. Additional equipment is then brought from storage areas to the scene. The collapse response team (Rescue Squad 3) does not currently have the ability to bring additional equipment such as lumber and shoring materials to the scene of an incident. The Hazmat team needs a large support vehicle in addition to the rescue squad. The efforts to procure federal surplus vehicles to carry this equipment have been stopped by the DC fleet maintenance division. It is essential that the appropriate transport equipment be obtained. Otherwise, the support equipment will simply not be available for use. Presently, private contractors are depended upon to transport these materials during an incident, but this system is not timely enough for life-threatening emergencies.
- The DCFEMS is taking delivery of two Rescue Engines this year. It has not been made clear whether these units will be assigned to special operations or what kind of specialized training their personnel will receive.

Equipment

Special operations require the use of a wide variety of tools and equipment to mitigate incidents. There are many shortcomings with the available equipment. Needed technical rescue and hazardous material equipment is not available, hampering the ability to safely perform operations. For example, state-of-the-art safe confined space rescue equipment including specialized breathing apparatus with exchangeable air supply, above ground and emergency backup supply for rescues as well as air monitoring instruments should be available for safe operations.

- Vehicle rescue equipment such as the hydraulic rescue tools ("Jaws of Life"), air bags, and electric tools are in need of repair, replacement and routine servicing. Department members at each of the three rescue squad spoke of paying for repairs out of their own pockets.
- Specialized equipment needs to be repaired or replaced in a timely manner. Presently, this is not done because of problems with the procurement system. The equipment that has recently been purchased has been obtained through donations and grants sought out on the initiative of the members of the department.
- The rescue companies continue to function in part because the crews are paying for or making repairs to emergency equipment themselves when it breaks. They are doing everything from fixing broken hydraulic lines on Hurst ("Jaws of Life") extrication equipment to paying for gasoline to run the power units. In one case, a group of firefighters paid a repairman working on the backup generator at a firehouse with their own money to perform emergency repairs on a broken generator in one of the fire squads. Crews are procuring their own hand tools such as axes, forcible entry equipment, pike poles and gloves, helmets, and boots, pliers, screwdrivers, wrench sets, etc.
- The number of types of specialized personal protective gear is currently inadequate. Special operations require different protective clothing than firefighting gear. Hazmat team personnel need flash fire protection such as fire-resistant jumpsuits to wear under their specialized gear. All rescue squad personnel should be afforded this level of protection for all their operations. In addition to these jumpsuits, firefighters assigned to the special operations should received personal protective clothing consisting of a rescue helmet (fire helmets are bulky and inadequate), goggles, hearing protection, elbow and kneepads, and work gloves. A single major injury or several minor injuries to personnel will cost more than the initial cost of providing industry standard of

safety equipment. Also, as detailed later, the Hazmat unit has an insufficient number of specialized protective outfits.

- The Hazmat unit requires a second cellular phone, a hardened laptop computer, and a portable fax/copy machine to facilitate communications during Hazmat operations such as the B'nai Brith "anthrax" incident, where information was requested from experts from around the country.
- The Hazmat team had determined that their newly purchased communications equipment for the encapsulated suits does not operate to their needs.
- Carbon monoxide meters should be purchased for all truck companies in the city. Currently, the Hazmat unit has the only CO meter in the city, increasing its responses to numerous false alarms all over the city and decreasing its availability for other emergencies and training.
- The Special Operations are in dire need of improved lighting equipment and a generator for night operations. (This could be coordinated with a similar need at the Training Academy.)

Staffing

The Battalion Chief in charge of special operations was promoted into this newly created position two weeks prior to the start of this review. He had previously served as a Captain in various special operations functions within the department, and has the appropriate background and experience to command these operations.

Each rescue company (including the Hazmat Company) is staffed with five personnel. All assigned personnel are trained for confined space rescue, structural collapse rescue, trench rescue, rope rescue, Hazmat level 3 and vehicle rescue. They are also tasked with water rescue, but received no water rescue training, and do not train with

fireboat crews.¹ On fires, the rescue squad's primary responsibility is the search and rescue of trapped victims in buildings. The crew divides into two teams, one going to the fire floor and one to the floor above to search for victims. The Rescue Squads function as very effective teams on fires.

Staffing problems include the following:

- Personnel detailed to a rescue squad, for fill-in purposes when a regular squad member is out are not required to have any technical rescue training to be detailed to the squad. There are no clear provisions for detailing members of one squad to another or for hiring trained personnel on overtime. (The engine crews in the rescue company stations might be utilized to provide back-up personnel for the squads as well, if they received some basic training in the technical rescue operations.) The engines often respond with squads anyway.
- The current selection of rescue squad personnel requires a long process in which candidates ride with the company for a 90-day trial period and evaluation by the squad officer. The officer must evaluate several candidates, and it therefore takes about one year to fill a vacancy. During this time, the squad is effectively down-staffed to four trained rescue personnel, because the untrained candidate is used to make up the fifth position, rather than assigned as an additional person for evaluation. Rescue incidents are frequently high risk situations for the rescue team as well as the victim. Not having a fifth trained person and having to look after an untrained person can reduce effectiveness and increase risk. The assignment of personnel to the newly formed special operations bureau, and a revised selection process for the division presents an opportunity for change. Personnel within Special Operations are considered the fire department elite. Provisions should be made for close scrutiny of applicants for transfer to these units. Most Special Operations personnel are very dedicated, but some have requested to be

¹ The last DC firefighter killed in the line of duty was a rescue squad member who died of an aneurysm in 1987 during a water rescue drill. They have not trained for water rescue since.

assigned that duty simply because they desire to go to slower units at a later stage in their careers.

- Additional recognition such as a special operations uniform insignia or patch would help morale in these units, after the long training and selection period. EMS members of the Special Operations units should not be overlooked and be issued the same uniform insignias.
- The Special Operations Battalion Chief has no permanent position assigned to assist him with his numerous duties. It is too much for one person to coordinate all of these functions. A Special Operations staff should be developed, with an officer to coordinate the hazardous materials team and an officer to coordinate the technical rescue disciplines (collapse, trench, confined space, rope and water rescue). These officers would assist the Battalion Chief in recruiting and training personnel to the section, keeping track of resources, and planning for incidents. Another officer would coordinate special events and dignitary protection, (possibly an EMS officer). In light of the unique threats posed by terrorists to the Nation's Capital, the department should also consider a full-time staff officer positioned to coordinate response plans for counter-terrorist operations and response. This position would logically fall under the special operations Battalion Chief's responsibilities. The coordination of the sub-specialties might be the assignment of one of the officers in each unit.

Training in Special Operations

Special operations require a great amount of training due to the technical nature of the incidents and amount of equipment involved. Progress is being made in training the Special Operations companies to bring them up to national standards. There is still a need for more training, especially increased cross-training among the rescue squads, and mutual aid training with other jurisdictions. Currently each Rescue Squad gets 4 hours of training each month for rescue squad operations, an inadequate amount of time to handle the continual training and re-certification that these skills require.

All personnel in the fire department are trained as Hazardous Material Level 2 (Operations Level) responders. Members of the Hazmat unit, Engine 12, and Medic 17 are cross-trained for confined space, trench collapse, and structural collapse response. The rescue squads are also tasked with vehicle rescue within the city and rescue of trapped victims or trapped firefighters. At the time of this review, the department was preparing to train all firefighters in the 1st Battalion to the Level 3 (Hazmat Technician Level) to assist with scheduling and to provide a large pool of responders available for terrorist incidents. Fireboat personnel receive specialized training in water rescue.

- Funding for training should be provided in the Special Operations budget. Presently, the department training is limited and funded through grants.
- The rescue squads currently respond to water rescue incidents but do not have any training and only limited equipment. Plans were underway at the time of this report to provide some water rescue training to squad personnel. The Department should consider using the fireboat personnel to assist in training members of the rescue squads to respond to water emergencies.
- Vehicle rescue training needs to be brought up-to-date for all rescue squad crews. Budget limitations and broken equipment have limited this training.
- The rescue companies do not get the opportunity to cross-train with each other, yet are supposed to back each other up during technical emergency incidents.
- General awareness training and SOPs for all first line engine and ladder companies need to be developed. Rescue companies are sometimes not dispatched initially on most technical rescues; the first arriving companies then attempting to improvise rescues without calling on available resources, possible in violation of OSHA rules. Commanding officers have varying knowledge of the capabilities and uses for each of the rescue companies. For example, a 911 dispatcher might send an engine company to a report of a

“man in a hole” and the engine crew may not have the training to realize that they are facing a confined space rescue requiring the response of a special operations team.

Cross-Departmental SOPs and Training for Special Operations – The department does not have adequate training for dispatchers in the communications division for the dispatch of special operations resources. There is also inadequate first-response training in special operations for all companies that might be the first to arrive on the scene of an incident requiring technical or other special operations. The department lacks written Standard Operating Procedures (SOPs) for the range of special operation responses. The consolidation of the unit is new but not most of its functions.

Special Operations Companies

The following are detailed comments on each specialized unit:

Rescue Squad 1 – Rescue Squad 1 is located in the downtown area of Washington, and is the designated high angle (rope) rescue company. It uses a 1993 E-1 Heavy rescue vehicle. While it is in the best condition of any of the rescue company apparatus, the body is coming apart in the rear, and there are problems with the frame and springs. The rescue vehicle may be scheduled for rehabilitation next year, only five years into its service life.

Rescue Squad 1 has more and better conditioned equipment than the other rescue squads in the city. This is largely due to the initiative taken by the individuals of this company to procure the tools themselves. There is no budget for any rescue squad equipment.

The vehicle extrication tools are old and approaching the end of their service lives. They still work because the firefighters have funded emergency repairs to some of their components out of their own pockets. There is virtually no preventative maintenance and no schedule for the routine replacement of these items. The air bags for lifting heavy objects off of people are at the end of their service lives. The unit has

virtually no electrical or pneumatic tools to back up the hydraulic rescue tools or to facilitate to the rescue of persons from modern vehicles or machinery.

The high angle equipment is up-to-date but in short supply. (There are only four helmets for a crew of five people, for example.) The bags the department purchased to store the equipment are tearing apart, and the firefighters have been forced to improvise, in one case carrying the equipment in a body bag.

The group assigned to Rescue Squad 1 has received approximately 40 hours in rope rescue techniques over the past year, and four personnel were in Arizona at the time of this report receiving instructions as rope rescue instructors. The initial training the personnel are receiving is on par with other jurisdictions, but provisions and time have not been made yet for continual training and maintenance of these technical skills. The personnel also indicated that training was not being delivered consistently by different instructors, and that every time they went to a training session, the procedures changed.

The squad's ability to function as a lead high angle rescue group is improving. The inability to train with other rescue companies means that they are on their own, however, if a protracted and manpower intensive incident arises. Additionally, they have not yet developed standard operation procedures for rope rescues.

Rescue Squad 2 – This unit is located in the uptown area of Washington on Georgia Avenue. It is the designated confined space rescue company.

Rescue Squad 2 is running a rescue vehicle that was the reserve unit. It is in poor condition and has over 141,000 miles. They are scheduled to get a rehabilitated rescue squad on a brand new chassis (donated by Freightliner/Mercedes Benz) as soon as the department released funds to the manufacturer that performed the rehabilitation. (A \$36,000 fee is needed to finish a \$200,000 + vehicle that was donated.)

The firefighting tools on Rescue Squad 2 are in the shortest supply of any of the rescue companies. The unit is short one portable radio. Several SCBAs were lacking

PASS alarms. The generator on the reserve unit was broken, and the unit has virtually no lighting for night operations or to support fireground operations.

Vehicle extrication tools are old and approaching the end of their service lives. They still work because the firefighters have funded emergency repairs to some of their components out of their own pockets. There is virtually no preventive maintenance and no schedule for the routine replacement of these items. The air bags for lifting heavy objects off of people are at the end of their service lives. The unit has virtually no electrical or pneumatic tools to back up the hydraulic rescue tools or to facilitate the rescue of persons from modern vehicles or machinery. Rescue 2 is short on wood cribbing to stabilize vehicles and has virtually no means to secure a vehicle that has been overturned.

The confined space equipment was severely deficient. Personnel continue to use standard fire department one hour SCBA bottles for confined space entry, which are bulky and do not provide a continual supply of air. Some of the SCBA bottles have expired hydrostatic tests dates. The unit does not have an air monitor to do air sampling and must wait for the arrival of the Hazmat unit during an incident. Their confined space ventilation equipment consists of an old electrical smoke ejector. The unit does not have up-to-date, intrinsically safe equipment. The Battalion Chief in charge of Special Operations was attempting to procure this equipment via grant funding.

The personnel assigned to Rescue Squad 2 have received training in confined space rescue, but have not done cross-training with the other rescue squads that serve as their back-up. The detailing of untrained personnel into the squad companies reduces their ability to function for confined space rescue.

The squad's ability to function as a lead confined space rescue group and to meet the OSHA confined space standards is suspect at this time due to equipment shortages. They have not yet developed standard operating procedures for confined space rescues, and the other companies in the fire department are not always aware of their capabilities, not is there a clear policy for dispatching the company to confined space incidents.

The equipment and training limitations also make their ability to function on complicated vehicle rescues more difficult.

The lack of training in water rescue puts personnel at extreme risk during flood emergencies when they are dispatched in Rock Creek or along Beach Drive, to which they respond with a small rubber boat.

Rescue Squad 3 – This unit is located in Anacostia. It is the designated collapse response company.

Rescue Squad 3 is running a 1985 rescue squad that is in the worst condition of any of the squad companies. The body is severely tilted to one side and in very poor shape. This unit needs to be replaced, not rehabilitated. The current, unsatisfactory replacement plan is that when Rescue 2 gets a rehabilitated rescue vehicle, Rescue 3 will be the reserve vehicle being used by Rescue 2, which is also in poor condition.

The cave-in unit has a second hand converted step van procured from a utility company. It is in fair to poor condition and has high mileage. The unit cannot hold the required amount of equipment necessary to support a collapse response. Equipment is jammed into the vehicle making access to any single piece of equipment difficult or impossible without unloading all the other equipment, slowing a response. This unit needs to be replaced with a pod-style, lift-back style or large enclosed trailer support unit capable of hauling technical rescue equipment as soon as it is feasible.

Like other squads, vehicle extrication tools are old and approaching the end of their service lives. There is virtually no preventive maintenance and no schedule for the routine replacement of these items. The air bags for lifting heavy objects off of people are at the end of their service lives. The unit has virtually no electrical or pneumatic tools to back up the hydraulic rescue tools or to facilitate the rescue of persons from modern vehicles or machinery. Rescue 3 is short on wood cribbing to stabilize vehicles.

Due to procurement of new equipment through grants, the company is building up its supply of technical equipment. However, due to limitation of the apparatus, they have

no quick means of responding to a scene with any of this equipment. They need to build up their inventory further to be on par with the rescue capability of surrounding jurisdictions. They too have virtually no lighting for night operations.

Hazmat Unit – The Hazmat Unit uses a 1991 Emergency One Hush Rescue unit that has been developing problems with its frame and body, and will be in need of rehabilitation soon. The unit does not have enough space to carry a full complement of hazardous material response equipment.

The Hazmat unit is staffed by at least five (5) Level 3 (Hazmat Technician) personnel, of which at least one must be a Level 4 (Hazmat Specialist), which requires attending Hazmat training outside the department. The Hazmat team is backed up by the rescue squads. The department needs more specialist (Level 4) personnel assigned to the unit on each shift.

The team's equipment for monitoring and diagnosing problems during Hazmat response seems adequate, and the team has the advantage of being able to call upon some federal resources in the area.

The equipment available for hazardous materials incident mitigation is in need of attention. The unit only has access to six encapsulated level-A entry suits (the "space" suits used to enter the most hazardous atmospheres). The ability of the unit to actually mitigate a prolonged, hazardous incident is hampered by a lack of this equipment. Any incident aside from a chemical spill containment operation would likely require the assistance of mutual aid resources.

Fireboats

The primary mission of the fireboats is to provide water rescue, EMS, and fire protection on the Potomac and Anacostia Rivers. They also provide pollution control for oil or chemical spills on the rivers and assistance to watercraft and other vessels. These units also provide the only protection for the three large tour vessels on the water, (the Spirit Ships and the Oddessy, which can hold up to 2,000 passengers at any given time),

numerous other small tour boats, as well as rescue and firefighting should another plane crash occur in the Potomac River. The fireboats fill a variety of roles and there is no substitute when they are needed. This company is a busy marine unit compared to other cities and their unique service is needed.

The fireboats are in good condition particularly compared to other city resources. Fireboat 1, the *John Glenn, Jr.* is a traditional city fireboat that was just recently rehabilitated by the U.S. Coast Guard and DC fire department personnel at a Baltimore shipyard. The *John Glenn, Jr.* is staffed by a crew of three: a U.S. Coast Guard certified Marine Pilot, a U.S. Coast Guard certified Marine Engineer, and a Fire Officer/Deckhand. The *John Glenn, Jr.*'s staffing was cut from five people several years ago when the fire department was unable to continue funding a SCUBA dive rescue team. It is an all weather unit that is capable of supplying 7,000-8,000 gallons of water per minute for firefighting operations and can serve as an on water command post for water or bridge incidents. The *John Glenn, Jr.* is also used to break ice during cold winters to facilitate the transport of fuel to Andrews Air Force Base and the Stuart fuel depot that supplies Washington D.C. with fuel for power generation. Although in many jurisdictions it is the responsibility of the United States Coast Guard to break river ice, the DCFEMS has assumed this necessary task.

Fireboat 2 is a two year old Boston Whaler with a 750 gallon per minute water pump and twin outboard motors. Fireboat 2 is in very good condition, but lacks advanced electronics such as radar and GPS. These relatively inexpensive items (\$2,500) were cut from the unit when it was purchased due to funding limitations. Fireboat 2 is staffed with two people, a Marine Operator and a Deckhand/Rescue Swimmer.

Fireboat 3 was purchased in 1984 and was the first fireboat built by the Boston Whaler company. It is currently dry-docked for service by the fireboat crews. When the boat is repaired, it will be used as a back-up boat or as an extra unit when large numbers of watercraft are on the river, such as the Fourth of July. It also has a 750-gallon per minute water pump.

The following concerns have been identified:

- Staffing of the fireboats appears adequate with a daily complement of five people per shift, however, several vacancies have not been recently filled. We do not recommend doing away with the Fireboat unit, but it may be possible to staff it differently (E.g.: with a pilot and engineer full-time supplemented by a land company, which is how the departments from New York and Tacoma operate). This requires further research, as there are many options, including leaving the unit as it is currently.
- Personnel on detail to the fireboats to temporarily fill vacancies are not required to have any training in water operations, nor are they required to be able to swim. This is dangerous and inadequate. There is no provision for the establishment of a personnel pool with training who could be detailed to the fireboats. Any time untrained personnel are placed on a detail to the boats, the effective and safe operations of the crews are reduced because these personnel will not be able to operate the firepumps, pilot the boats, or effect rescues.
- No cross-training with land units occurs. The fireboat crews could be used to train land units for water rescue. The fireboats are not used to train rescue squad crews in water rescue, yet the rescue squad crews are responsible for all inland water rescue and the fireboat crews are not (a rescue squad would be called for someone drowning in the Tidal Basin, for example, even though the fireboat station is much closer). The building in which the fireboat crew is stationed is Police Department-owned and has a classroom that would be appropriate for this training.
- The fireboat crews have no means to respond to assist rescue squads with complicated water rescues. The pick-up truck assigned to the fireboats is not considered a response vehicle and is not equipped with lights or a siren. The truck is old and unreliable. It should be replaced with a lightweight vehicle that can be used to respond to all water rescues in the city, and provisions for the response of the fireboat crew to inland water rescues should be incorporated into DCFEMS response policies.

- The units have a limited ability to cope with a mass casualty incident on the river. Large flotation devices on each boat are on loan from another rescue agency. The *John Glenn, Jr.* currently provides the only platform to hold multiple victims should a tour ship sink or catch on fire, or a plane crash.
- The shipboard firefighting capabilities of the boats are limited due to lack of protective equipment and limited staffing. The unit's marine firefighting is, in practice, limited to external operations.
- The District of Columbia Metropolitan Police Department Marine Unit responds along with the DCFEMS fireboat on water craft emergencies. Operationally, some duplication of services exists between the fireboats and the police marine units on rescue calls. The MPD Marine Unit is not always staffed. The police boats are often staffed with only one officer, and the police are not trained to provide emergency medical care, nor do they have the capability to fight fires. The Fireboats provide the only marine units with this capability that are staffed around the clock in the city. This is especially critical for water safety during the pleasure boaters' season.
- The Police Department budget includes direct funding from the U.S. Coast Guard for marine operations, estimated at \$80,000 per year. The Police have a well-maintained fleet of 11 boats, yet do not provide fire or EMS services and have a skeleton staff during all but special events. The fireboats, on the other hand, receive none of the funding, and have to rehabilitate and scrounge used parts for motors and equipment while the Police force is well stocked. The unit does not directly recover any costs from its pollution control and cleanup operations or for any other services.
- Only a few of the Fireboat personnel are trained as Emergency Medical Technicians, and none are Paramedics. All personnel should be trained EMTs and the department should consider staffing a paramedic to enhance the ability to provide lifesaving emergency care to victims on the water since emergency

care will be delayed while a patient is transported to the shore.

- The personnel on these units are not trained nor equipped to safely perform ice rescues despite freezing conditions that occur on the Potomac.

Foam Units

The foam units are primarily used to provide standby protection for the President and Vice-President during helicopter flights. They also provide a valuable resource for the Hazmat team. These units seem to be in good condition and are used effectively. Some repairs to the foam units have been delayed due to procurement problems, discussed elsewhere.

Metro and Rail Operations

The department is in the process of updating its Metro operating procedures. Sergeants are providing in-station training to companies for metro operations.

The ability of the department to conduct a safe and effective operation on a large scale metro train incident is hampered by the lack of up-to-date rescue equipment on the rescue squads, limited access to mass casualty materials and very poor radio communications.

CHAPTER 7 – TRAINING

The DCFEMS Training Division is primarily responsible for a) training fire recruits and b) continued training of fire and rescue personnel in basic skills and advanced firefighting tactics. The services provided by the division include:

- Entry level firefighter training.
- Emergency Medical Technician -Basic training and recertification.
- Continuing education and in-service training to firefighters in the Firefighting Division.
- Development of lessons plans for in-station drills conducted by company officers.
- Physical Abilities Testing for the hiring of recruits
- Record keeping for all fire and EMS training for Firefighting division personnel
- Complete accreditation of all training programs to national standards

Other divisions of DCFEMS conduct their own training, including the Fire Prevention Division for inspections. Communication Division for dispatchers, and until recently, the EMS Bureau for EMS training for their own personnel. (Communications and Prevention training needs are discussed in those respective chapters.)

EMS training was recently reassigned to the Fire Training Division to centralize training efforts and eliminate duplication, although it has not been completely assimilated yet. It is envisioned by the Fire Department that the Training Division will become the centralized, coordinating and facilitating agency for all fire and EMS training in the department. The current training staff is widely credited with major improvements in the function of the training academy over the past two years, from what was considered on almost non-functional, poor quality function for several years prior.

Staffing

The Training Division staff currently consists of one Deputy Chief, one Battalion Chief, two Captains, two Lieutenants, two civilian (non-fire department) maintenance workers, and one civilian secretary. The Division's staffing is down from 26 uniformed positions in 1995. Four Sergeants from the Firefighting Division are detailed to the academy to assist with each recruit training class. The current staff are motivated and capable personnel who have accomplished many improvements with limited resources in the past year, notably working towards the accreditation of the training programs to national standards, the completion of updating of lessons plans, and the procurement of new computer equipment from grant programs for record keeping. The assimilation of the four EMS Bureau personnel (an EMS training officer, an EMS instructor, and two paramedics) has not yet been reflected in the organizational chart, and was being sorted out at the time of this initial report. Previously, these EMS Training personnel had limited contact with the Training Division.

Some problem areas:

- Presently the Training Division is still organized to provide its original firefighter training support. The Training Division organization has not been revised to reflect the addition of EMS training. From a management perspective, the training academy appears top heavy, essentially retaining the management staff that was in place prior to the 1995 staffing reduction from 29 personnel to 9 personnel. From an operational perspective, the staffing appears short to accomplish the many tasks of curriculum development, recruit instruction, special operations training, record keeping and routine administration of the facilities. It is a case of too many "chiefs" and too few "workers." The redistribution of duties and assimilation of the EMS Bureau training personnel may serve to smooth this apparent misalignment. There aren't yet firm plans for organization change to expand the division's role as training coordinator for the entire department.

- The Captains and Lieutenants seem bogged down in many mundane tasks such as data entry and maintaining the facility, rather than serving as lead instructors for recruit and other specialized training.
- The training division staff seems to have a negative bias toward the EMS Bureau personnel. This is displayed in several areas: uniformed emergency responders from the EMS bureau are considered and referred to as civilian employees, which implies that they are non-operational and therefore less important than firefighters. EMS supervisors are not respected as fire department officers. Equal rank EMS officers are not considered equal to fire officers. This lack of respect for EMS personnel will interfere with the training division's ability to train EMS personnel. It is too soon to tell if this attitude will change now that the EMS training personnel have been assimilated.

Training Facilities

The training division operates out of a small facility constructed in 1961 and located in Southeast. The facility is totally inadequate and a blemish on the Department.

- The live-firefighting training building has been condemned and inoperable since 1988 and must be replaced with a new facility immediately. Firefighter training requires a live burn simulation building, which allows for fires to be burned and extinguished over and over without damaging the building's structure. It allows firefighters to be trained realistically and safely. This requires a specially designed facility. Presently, this condemned building is being demolished and is only used for advanced special operations structural collapse training (an ironic end use for this structure.) Efforts to replace this simulator have been researched and a new building was designed in 1994, but it has not been funded and is not in the capital improvement budget. More specifically, over \$300 was spent on the design of a state-of-the-art facility, but the projected building cost of \$2.5 million dollars were never approved.
- The inability to do live burns severely affects the quality of training for new personnel. Live burn training must be given to meet firefighter training

standards. This is presently accomplished by sending D.C. firefighting units to neighboring training facilities such as Alexandria, VA, or using military buildings scheduled to be demolished at U.S. Army Fort Belvoir, VA. This requires transport of the students and large amounts of equipment to distant jurisdictions, and is feasible only when schedules permit their use. The logistics and travel required ultimately reduces training time.

- Live-fire burn training requires safety and supervision in accordance with the NFPA 1403 standard. Specifically designed burn simulators have emergency safety features and access doors necessary for safe operations. Using buildings that are to be demolished increases risk to injuries because the safety features are not incorporated.
- The training needs of DCFEMS have outgrown an outdated facility. The Training Academy is not adequate for centralized training. The Fire Training Division Academy classroom building is too small to train firefighter recruit schools and EMS Bureau personnel. The building has only two working classrooms, which provide a poor learning environment. Additional space is provided by "temporary" trailers that have been turned into supplemental classrooms and office space for Special Operations. EMS Bureau personnel continue to be trained at the Macmillan Drive EMS training unit which, is also inadequate. There is not enough room to accommodate the EMS personnel at the Fire Academy.
- The training facility requires constant work on its plumbing, heating, and air-conditioning, to the point that staff spends a large amount of time in an effort to simply make the building habitable during the hot summers and cold winter months.
- The academy was originally constructed before women were accepted into the fire service. Therefore, all the female locker rooms and facilities were originally added as temporary structures. They are substandard, and possibly in violation of anti-discriminatory statutes.
- The outside area of the facility is in deplorable condition, interfering with the ability of the academy to function safely and properly. There is inadequate parking for students and staff. The facility should be neatly kept as a learning

campus. Instead, the facilities parking area is used for broken apparatus storage. Old and damaged fire vehicles are stored for parts usage to support the fleet maintenance operation. This fire department "junk yard" interferes with parking, overcrowds the outside training area, and is an eyesore. It also sets a very poor example for recruits. The sloppiness of many of the troops, and low morale, is in part a result of the message sent by the poor condition of the capital plant of the department. This message begins with new employees at the DCFEMS training school.

- The Training Division is short of all types of teaching materials, from up-to-date firefighting manuals, to paper for the copy machine, to pencils and notebooks. There are virtually no advanced audio visual materials, just a chalk board and a slide projector. For a fire and EMS training facility to be adequate, there must be suitable classrooms for lecturers and audio-visual capabilities. This is especially important to level the playing field for personnel with various backgrounds. There should be indoor and outdoor class areas suitable for demonstrations and practical applications. The driver training roadway and concrete around the facility is cracking apart, probably as a result of the increased weight of present day fire apparatus. If deteriorated surfacing is not corrected, it will result in further damage until the area is not serviceable and damages fire vehicles.
- The department has been ordered to remove four underground fuel storage tanks at the training facility because of a threat of environmental contamination. Failure to remove the tanks on time or discovery that the tanks have leaked will require additional clean-up expenses. The tank removal will involve excavation and removal of concrete. The tank removal and concrete repair should be coordinated and complete in a timely manner.
- There is not enough locker space for students.
- There is inadequate space for storage of firefighting equipment. One crowded room houses the storage for academy materials, breathing apparatus, and a weight room for physical training.
- The facility provides inadequate security against theft of materials. Advanced equipment such as a video camera has been stolen and not replaced.

- An inoperable water tower takes up needed space on the academy grounds. The estimated costs of demolition of this tower are \$65,000. The academy staff is required to maintain the tower because it is in the path of aircraft flying to National Airport.
- There is inadequate storage for assigned fire apparatus, as the engine bay at the training facility has been converted into a training and equipment storage area.

Training Equipment and Apparatus

The training division has a tiller truck and engine assigned for driver training, and several staff vehicles. Here too, the equipment is inadequate.

- The staff vehicles are old and reaching the end of their services lives.
- The tiller truck is useful only for driver training. Its ladder does not meet safety standards and is unable to be used by the staff for ladder operations.
- The difficulty of procurement of equipment for the station has caused a negative impact on the delivery of basic firefighter training. Equipment from the training academy is "borrowed" to re-supply the units in the field. This causes the training academy to teach with out-dated, insufficient, or possible unsafe older tools. This can affect the new recruits' ability to learn because they won't get the opportunity to actually practice with some tools and equipment, and adversely effects the quality of the instruction.
- The academy is in need of lighting equipment to conduct night firefighting training. They are currently not able to conduct this training.

Training Curriculum

The training division is expected to become an academy that can certify training to national standards. It has achieved this accreditation for Firefighter 1 and 2;

Hazardous Materials Level 1 (awareness); 2 (operations); 3 (technician); and 5 (command); and Fire Officer 1.

Many firefighters have obtained advanced EMS training, such as paramedic certifications, from Maryland and Virginia, which meets national certification standards. This is reasonable and considered acceptable by the Department as qualifying a firefighter for EMS duties. However, there is a reluctance to recognize certifications according to national standards obtained elsewhere by EMS Bureau personnel, especially with regard to firefighter training. Many EMS Bureau personnel have firefighter certifications from neighboring jurisdictions, but there is a reluctance to accept that certification without training at the DCFD academy. This serves as a hindrance to transfer of personnel from the EMS to fire divisions, and causes additional costs because personnel are retrained in skills they have already achieved. The difference in D.C. practices from others can be worked out on the job. Among the deficiencies in the curriculum:

- Fire officer training does not include EMS supervisors. The training division also does not provide EMS officers with the supervisor training, similar to that given for Fire Sergeants. Basic Supervisor and management training can be similar regardless of whether EMS or fire personnel are supervised
- The Training Division uses firefighting division officers to develop lesson plans and provide training for in-service and recruit schools classes. All company fire officers are expected to provide in-station training each working shift. Because of these expectations, it is important that fire officers be trained as instructors. Sergeants receive the national standard fire instructor I course (which teaches instructional skills), but are not required to achieve fire instructor II training (which specifically trains instructors to develop lesson plans). The training division is in the process of working towards the development of Fire Officer 2 and Fire Officer 3 programs, which require a certification as an Instructor Level II.
- Training materials in the stations are not uniform or up-to-date.

- The academy is only able to facilitate a limited amount of chief officer training, and few chiefs are able to attend advanced courses at the National Fire Academy. More command officer courses need to be developed.
- The Training Division has not completed strategic planning with regard to future training needs. The Training Division should develop a 5 year plan for departmental training needs. The Division should also complete a budget each year as part of the planning process. Until the training needs of the department are identified for the future, the training division will always lack sufficient preparation to provide the increasing levels of training required and expected.
- The DCFEMS should be more productive in increasing upper and mid-level officer training by taking greater advantage of the quality cost effective training at the U.S. Fire Academy. The department should not rely on individual officer initiative to request attendance at courses, but, identify key positions which need USFA courses.
- The Training Division should be the coordinating agency within the department for this effort. The commander of the training division along with top management of the department should identify the key officer positions and the appropriate USFA courses. The officer (fire and EMS) applications should be submitted for attendance every fall after the publication of the USFA course schedule.

CHAPTER 8 – COMMUNICATIONS

This chapter discusses the Communications Division, which reports to the Assistant Chief, Operations. It is responsible for the Central Communication and Dispatch Center for fire and EMS calls, and the communication equipment used throughout the department. A crisis mode of operation in communications has, because of many factors over the past ten years, become the norm.

Organization

The question of whether Fire/EMS communications should be consolidated with 9-1-1 and police communications has been debated within the city for some time, but is not yet resolved. This is a vital issue, and the ultimate decision will have a considerable bearing on the manner in which many other fire/EMS and police communications issues are addressed.

Consolidation is feasible, but the communications consolidations that have been successful have been the result of a total commitment by all departments involved and the product of extensive planning. These conditions are not evident at this time. One small indication of this: Police communications personnel initially answer all 9-1-1 calls (fire, police and EMS) with the verbal greeting "Police Emergency, Operator ###." This is not the quickest or most effective way to determine what type of service (police/fire-EMS) is needed by the caller.

The present staffing of the operational, support and administrative components within the communications division is the product of evolution, and is not based on an assessment of current or future needs.

Budget

The Communications Division budget is developed largely by referring to the current and/or previous budgets and making adjustments in dollar amounts. There appears to be little relation to need, changing technologies, past experience or future plans.

Communications Division management is restrained from managing its own budget (as in most divisions).

Vendors are reluctant to bid on District fire/EMS communications work for fear of delays and/or non-payment. This in turn increases costs and stymies competition.

The communications budget is a "responsibility center" but not organized as a true "cost center". Actual personnel costs are difficult to determine. When vacancies, because of actual vacant positions, annual and sick leave, etc. are filled by use of non-communications division personnel (i.e., firefighters), the cost of that overtime is borne by the Firefighting Division, as opposed to it being "charged back" to the Communications Division. This creates a distorted picture of the true personnel staffing costs of the Division (and increases the apparent cost of fire suppression.)

The Communications Division previously handled many computer operations within the Department. Over time, some but not all have been informally reassigned to the Management Information Services component of the department. Many of these operations remain funded from the Communications Division budget, further muddying cost accountability.

Personnel, Operations and Physical Plant

The Communications Division has three customers: the citizens who live, work, or visit the nation's capital; the Emergency Medical Service Bureau; and the rest of the Fire Department. At this time the culture of the Communications Division does not

always reflect the need to strive for customer satisfaction. These have been difficult years that have taken a great toll. Many good people work in the Communications Division under very difficult conditions, and there is a great need to improve their morale and outlook for the future.

The overall mood of personnel at this time is a mix of depression stemming from what they have been through, combined with hope that things will/must get better.

The role of communications within the department is vital and demanding; it requires highly qualified and trained personnel to carry out the division's mission. The new employee recruitment, qualification and selection processes are fragmented and not as effective as they need to be.

The physical condition of the current communications center is deplorable by any standard. The physical condition of the "new" three-year-old building adjacent to the communications center, given its age, also is deplorable. (This is one of, if not the, newest building in the District's building inventory.) The grounds of the current and new communications buildings and the roadway (McMillan Drive, N.W.) in front of the buildings are in poor condition.

The physical configuration of the fire/EMS Communications Center Operations Room does not facilitate easy communications between working personnel, or adequate supervision.

Equipment/Technology

Radio System - The radio system is inadequate to meet the needs of the Fire and EMS Departments. Problems with it include: the number of channels it operates on; the absence of interoperability capability; age of its imbedded technology; insufficient outside geographic coverage in some areas of the city; insufficient in-building coverage in some buildings (particularly large private and government buildings); and the condition of the components of the below ground Metro tunnel radio system for which the Fire and EMS Department is responsible.

The Fire Department has been attempting to upgrade its communications to a modern 800 MHz trunked radio system since 1984. One of the barriers to doing so is the need to get FCC approval for a renewal of frequencies. Because of a lack of funding for the new system, the time expired on the right to retain the new frequencies that had been secured. It is still unclear how this matter will be finalized. The Director of the fire/EMS communications center reported that the FCC is currently reviewing the license application.

Funding is already approved and budgeted, and a contract exists with which to purchase the system. Given the condition of the present system, the new one should be purchased as soon as possible after granting of the license.

Before proceeding with the new system the number of transmitter/receiver sites necessary to ensure that the system provides adequate exterior and interior radio coverage needs to be reassessed by an independent (non-District/non-vendor) qualified authority. We believe the four sites currently planned may be insufficient (though the potential vendor, Motorola, guarantees the performance of the system in the contract).

In all fire and EMS vehicles, the new radio system should have mobile equipment with the ability to indicate via data transmission, without the need for voice transmission, the status of a unit (i.e., enroute to incident, arrived at scene, enroute to hospital, arrived at hospital, in quarters). This feature will improve the reliability of response time data, lessen radio voice traffic, and assist in the development of performance measures.

Many fire/EMS units responding to large buildings find they cannot communicate from within the building back to the communications center, and vice versa. This is because of the concrete and steel construction of many buildings. A new radio system will lessen this inability to some degree but not eliminate it. A new radio system should incorporate a cache of small, portable, remote receiver sites that can be set up at major incidents in the building, to enhance radio communications.

Fire Station Alerting – The Vocalarm System is the primary means for dispatching fire/EMS units when they are in quarters. This system is in very poor condition and made workable only through resourcefulness and diligence of communications division personnel. The system is in dire need of replacement. It should be replaced by a fire station alerting system (the current more appropriate name for a vocalarm system) that is part of the radio system. This is a more efficient, cost effective, and easily maintained approach to meet the need.

Computer Aided Dispatch (CAD) – The Computer Aided Dispatch (CAD) system is no less important to Fire and EMS operations than the radio and vocalarm systems. The current system is much newer than the radio system, but in relation to rapidly changing computer technology it is quickly reaching the point of technological and functional obsolescence. The Fire and EMS Department plans to purchase a new CAD system, possibly from the GSA schedule. We urge caution in this approach. To meet the Fire and EMS Department's needs from the standpoint of dispatch functionality, management information and records management, the CAD system should be carefully specified in a Request for Proposals (RFP) and purchased by a competitive process. It needs to be purchased on an accelerated basis, given that for similar reasons, many communities are replacing their CAD systems at this time, or will be over the next several years and there will be a queue.

Automatic Vehicle Location Systems – EMS needs must be considered in the design of a new CAD system. Currently a major impediment to improving EMS response times stems from the need for EMS units to transport patients to hospitals remote from the scene of the incident. When the EMS units return to service, they are often far from their normally assigned geographic area. If the CAD system could recommend the actual closest unit to the location of a call, based on tracking the actual position of the EMS unit rather than the location of its station, EMS response times could be significantly reduced, and efficiency increased.

Such systems are available and known as Automatic Vehicle Location (AVL) Systems. (The name more accurately should be an Automatic Resource Location (ARL) System, because the technology applies to individuals outside of vehicles as well as to

vehicles.) An AVL/ARL system should be given active consideration as a means of improving command/control and deployment of EMS resources, and reducing EMS response time.

Mobile Data Terminal – Many fire/EMS department utilize a Mobile Data Terminal (MDT) System to exchange important location, hazard and EMS patient information in a quick and secure manner. A MDT system should also be given active consideration for use in all EMS and some selected fire units.

Tunnel Communications – The ability of fire/EMS units to communicate via radio when operating in the Metro tunnels below ground is severely affected by the portion of the Metro Communications system for which the Fire and EMS Department is responsible but which is not being maintained. This is a critical operational need and could have a severe negative impact on the safety of Metro passengers, firefighters and EMS personnel. Notwithstanding a new radio system, the current under ground portion of the Metro radio system needs immediate repair and ongoing maintenance.

Purchasing and Maintaining New Technology – Outsourcing should be considered for the installation and maintenance of the various technologies discussed above. The Fire and EMS Department would then need only a small unit in-house with the skills to make emergency repairs.

Communications Training

At present, there are two components to training new fire/EMS communications employees. One deals with fire operations procedures, and the other with EMS operations. Combined, they take approximately six months to complete. Only when both are completed can new employees be assigned to a shift. Much of the fire operations training material presented are the result of a contract with a vendor. Given the subject matter covered, this six-month period seems too long.

Notwithstanding the fire operations training provided to communications personnel, the firefighter interviewed roused questions about the quality and adequacy of fire communications, based on his experience and on monitoring equipment.

The Fire and EMS Department has adopted an Emergency Medical Dispatch Pre-Arrival Instruction package purchased from a vendor. Part of the vendor's contract incorporates a personal professional certification process for Communications Division personnel that is largely administered by the staff of the Emergency Medical Service Bureau. This contract should be thoroughly reviewed prior to extension or renewal, not because of its protocols, but rather because of the labor-intensive review required to establish certification.

The importance of adequate communication training cannot be over emphasized-- it is critical to the delivery of effective service. However, given the cost of this training combined with the number of persons dedicated to provide the training, the entire fire/EMS communications training system should be reviewed and amended if necessary to be more cost effective.

Intra-Department Communications

There is no department-wide "e-mail" system or computer network. This creates inefficiencies in intradepartmental communications, especially in the dissemination of important notices, memoranda, and general orders.

Any written document that receives department-wide circulation must be hand-carried to the intended recipients. The delivery of some critical documents (e.g., directives or special orders) requires that a supervisor not only hand-deliver the document, but also obtain a signature from the recipient. Should a recipient be out sick, on annual leave, or otherwise absent, completion of the delivery process may be delayed substantially, thus creating administrative headaches for the supervisor. Modern e-mail systems can be programmed to deliver documents to all recipients on certain lists, and to provide the sender electronic confirmation that the intended recipient not only received the document, but "opened" it (indicating that the document was examined). In the

context of accountability for knowledge of directives or orders. e-mail systems offer unsurpassed ease of both delivery and documentation of receipt.

Other Comments

9-1-1 Tax – The District of Columbia is one of the few cities in the nation that does not utilize a 9-1-1 tax to offset the cost of 9-1-1 service and other costs associated with the personnel, training, administration and equipment/technologies used in the dispatch of police, fire and EMS. This type of tax also helps recover the charges levied on a city by telephone service providers to provide 9-1-1 service and maintain 9-1-1 database information.

Fire Alarm Boxes – The fire/EMS communications division has recently removed the old, malfunctioning, and no longer necessary fire alarm boxes from various locations around the city. However, still remaining at those locations are the pedestals in which the fire alarm boxes were housed. The vacant housing has wires exposed. Although not energized, they leave a negative impression on the public. The pedestals should be removed.

CHAPTER 9 – SERVICES

A cluster of support functions are gathered in one of the major bureaus of the fire department, under the Assistant Chief for Services.

Under this function are management information services, research and development, professional standards (including safety), fleet maintenance, compliance, property and supply, and personnel liaison. This chapter summarizes the needs in each of those areas.

Management Information Systems (Information Technology)

This section presents an overview of the MIS function across the whole department. Additional specific problems in computer support are addressed in the chapters on each fire department function.

Current Systems - The MIS function of the D.C. Fire and EMS Department (DCFEMS) is responsible for information technology at 43 locations around the metropolitan area:

- 1 DCFD Headquarters (Grimke Building)
- 33 Fire Houses
- 2 Emergency Medical Services (EMS) locations
 - 1 Fleet Maintenance location
 - 1 Training Division location
 - 1 Fire Prevention Division location
 - 1 Communication Division location
- 1 Warehouse
- 1 Radio Repair
- 1 Police and Fire Clinic (at Providence Hospital)

The MIS director seemed very knowledgeable of the field and the departments' MIS problem. Current PC configurations were estimated by the MIS Director as approximately the following:

30 percent	386 models and below
60 percent	486 models, 4MB & 8MB Memory
10 percent	Pentiums or above

The FEMS shares a high-speed Ethernet LAN (with 3 routers) with the DC Corrections Department. It has been designed for high reliability at data rates up to 100 mbps and is connected to the DC WAN to provide connection to the FMS. FEMS headquarters and EMS locations have recently been connected to the citywide Wide Area Network (DCWAN). Other divisions have not yet been connected. These are good ideas.

The FEMS and the Department of Corrections (DOC) have been working on a joint effort known as the "Technology Center" in the Grimke building. The headquarters of both departments are co-located in the Grimke Building. Co-location is a significant factor in establishing the commitment of both departments to this project. The Technology Center concept of operations is a model of interdepartmental cooperation worth emulating by other departments and the District at large. The Technology Center provides:

- Technical staff interaction and support
- Application prototyping and testing
- Multimedia training and presentations
- Hands-on interactive training for FEMS and DOC personnel
- Continuous skill development and easy user accessibility

Problem Areas – The current information technology infrastructure that encompasses the above facilities is marginally adequate to support any new automation efforts or additional network connectivity. The infrastructure is serviceable, at a minimal level, but is very fragmented, old, and poorly utilized in key operational areas. Many divisions of the Fire Department are not computerized and have to use paper records. They are wasting expert time on clerical functions. Fire stations are still forced to use carbon paper for record keeping.

The Fire Department should consider replacing, at the minimum, its LAN connected workstations by workstations that are compatible with the MS Windows-based operating system. As stated in the most recent DC information technology strategic plan, "*Information Technology Strategic Plan 1997 – 2000*," "upgrading older PCs to support MS Windows is not cost effective, given the low prices in the market place for fully configured 80486 and higher MS Windows-based PCs." It would be better for the department or all district agencies for that matter, to purchase new PCs in a phased approach and implement a replacement schedule for the purchase of future equipment. This will produce maintenance and support benefits that will help offset the cost of upgrading.

The DCFEMS has been poorly served by its existing technology and related expenditures in part because it has not had a well planned and articulated technology and information systems policy (nor does the city, across departments. Budget constraints have impeded the acquisition of new technology, the maintenance of previously purchased systems, retention of adequately trained systems and network personnel. Accountability for ensuring that all technology supports the DCFEMS service delivery and operations mission has been poorly defined. This has resulted in many different applications and databases being used locally (at different DCFEMS locations), sometimes without the knowledge of the MIS director. These local applications and databases are therefore not supported by the overall DCFEMS MIS function but by the user location. The current MIS Director has recently developed a draft technology strategic plan that will address many of these issues. This plan should be finalized and presented to the Fire Chief and others that have funding and decision making authority.

The DCFEMS cannot afford the multiple, on-going streams of maintenance and support costs associated with continuously upgrading PCs and outdated applications. It cannot afford the operational costs of non-integrated systems. The Fire Chief and MIS Director should identify common functions performed by multiple divisions, standardize functional procedures based on "best practices" whether internal or external, integrate information requirements and work-flow, and standardize selection of software and hardware to support the common functional requirements.

Below is a summary of the key problem areas:

- Current infrastructure is inadequate for future needs
 - Fleet Maintenance, Training, and Fire Prevention Divisions (all separate locations) are not linked to a LAN
 - DCWAN connections are non-existent in some locations
 - Equipment is serviceable, but only at a minimal level
 - Systems are fragmented, different applications used at different locations
 - Some critical hardware and software, e.g., file servers, Network software, Modems, and PCs, is employee-owned.
- ***Inadequately trained IS staff, insufficient number of IS staff***
 - Currently 3 people assigned (plus 2 detailed)
 - 1 person on EMS payroll working on EMS Network
 - 1 person on Communications payroll working on the Computer Aided Dispatch system (CAD)
 - 3 people under the MIS Director were originally working with a Unisys mainframe (mainly data entry) that is no longer in use. Their knowledge of the current technology needed at DCFEMS is minimal (knowledge is needed of Networking, Object Oriented Application Development, Relational Database Management Systems, PC Configuration, etc.).
- ***Lack of Money for adequate upgrades, system development, and knowledgeable IS staff***
 - MIS budget for FY97 was \$150,000
 - Unable to hire knowledgeable IS staff, unable to pay competitive IS market salaries
 - The Computer Aided Dispatch system (CAD) is old and needs to be re-developed [see communications chapter]. CAD system parts for repairs are hard to find, hardware used is becoming obsolete
- ***Currently no Inventory control of IT equipment***

- The MIS department does not have an inventory control mechanism for IS equipment. However, a proposal to implement a bar-code inventory control system is currently being developed
- ***Data is kept in many forms (local databases, files, logbooks, etc.) at different locations***
 - Data is kept in different database software applications, depending on local preference of users, without any particular guidance.
 - No standard software suite is mandated and installed agency-wide
 - EMS personnel are using manual forms for ambulance run reports which are then filed
 - EMS Imaging System has been out of operation for some time. Personnel to maintain system are non-existent.
- ***No Agency-wide information communication and dissemination mechanism***
 - There is no mechanism for DCFEMS personnel to obtain Fire Department rules and regulations electronically
 - No information is provided on the internet regarding the DCFEMS
- ***Currently insufficient IS security measures on PCs***
 - Passwords are not regularly enforced or changed on PCs
 - Lack of system-enforced security and control measures leads to waste, error, and potential fraud/abuse

Improvements – Many IT improvements have taken place or are currently underway. Some of the positive steps are as follows:

- Installed basic LAN system in Grimke, using primarily personally owned and borrowed equipment and software (File Server, Network Cards, Network Software, etc.)
- Connected headquarters and EMS department to the citywide WAN to allow access to CC mail
- Developed draft Strategic Plan and Presentation

- Developed budget plan for department-wide information technology for FY98. The plan was for \$5.5 million; the department was able to secure \$1 million. While significantly less than needed or requested, it is a start in the right direction. The budget for FY97 was only \$150,000.
- Began acquisition of new personal computers and network components within very limited budget.
- Developed draft hardware and software strategy and standards for the department
- Provided internet connectivity to selected users via dial-up accounts
- Developing a standard help desk function
- Providing hardware and network equipment for Fleet Maintenance's automated work order system. This system is 80 percent complete.
- Developed proposal for bar code inventory system for Fleet Maintenance. Process now done semi-manually (information is handwritten and entered into a database).
- Currently developing an automated Fuel Ticket System. The project is in two phases, short and long term. Short term: Develop system for getting fuel ticket data into a computer database. Long-term: Move to a fully automated fuel system.

Personnel Liaison

The Personnel Liaison function of the Services Division is staffed by one FTE. The Fire Department lost its Personnel Department during the 1980 establishment of the City's Central Personnel Office (CPO). Personnel Liaison is the department's interface with the CPO. All departmental personnel issues are initially addressed by this position, and then forwarded to CPO for action. The following are issues and concerns resulting from this organizational structure and dependence on CPO:

Liaison with CPO – The working relationship between the Personnel Liaison and CPO appears to be strained; the CPO was said not to return calls, and not to provide the necessary customer service.

Lost Records – Departmental personnel records are maintained at CPO. Employees wishing to view their records must make arrangements through the liaison, who then coordinates the visit with CPO. Often employees arrive at their appointment to find the CPO has lost their records. This has been a frequent problem, and is causing serious morale problems.

Employment applications and disclosures are held at CPO, and CPO has lost and/or misplaced many of these documents, too. This has caused problems in situations where employees receive additional employment points based on their disclosures (e.g., of their D.C. residency).

Employees are required to maintain a local residence for five years after hire. Several employees' scoring and standing on the hire list was influenced by the residency requirement. Validation of employee specifics is impossible without the signed employee disclosures.

Technological Support – Personnel Liaison has one 486 computer, with an old version of WordPerfect. There is no electronic data interaction with CPO (i.e. Local Area Network, internet e-mail). Interaction requires daily trips for both pick-up and delivery. Fax machine is sometime used, however it is often out of service.

Out-of-date PDs – CPO is still using 1960s vintage Personnel Descriptions (PDs). The technical requirements for some positions (e.g., Fleet Mechanics) has changed, however, PDs reflect generalist type skills. Consequently the new hires cannot perform the required work. The Department's Personnel Liaison cannot get CPO to update the PDs.

Property and Supply

As part of the Department reorganization on August 31, 1997, a new property and supply unit was created which combined two previous supply functions (Household & Uniforms, and Medical Supply).

Problems with the adequate provision of supplies (purchasing and distribution) is hampering delivery of most Fire and EMS functions, and is a major negative impact on morale.

Property System – The Fire Department has no dedicated Property Officer, and no formal centralized Property Management program. There are no standardized procedures for assigning accountability of departmental property. They do not have a bar code system or central inventory, commonly found in governmental organizations.

Property (e.g., office equipment, specialized equipment, furniture, etc.) is delivered to the customer without responsibility for the item being assigned to an individual and/or office.

Inadequate Supply System – Supply functions (Household/Uniforms and Medical Supply) were combined in theory during the recent reorganization. The functions are not yet integrated and still operate as independent sections. Advantages of a combined operation (efficiencies and economy of scale) are not being realized. The following factors are an impediment to that process:

- Lack of a comprehensive mission statement and/or strategic plan.
- Inadequate facilities to house a combined operation. Current facilities for both supply sections are inadequate, dispersed, and contribute to both spoilage and shrinkage.
- No Supply Chief position: each section has its own supervisor.

Medical Supplies – The Medical Supply section has 4 FTEs. It operates from a small storeroom located in the headquarters building on Vermont Ave. They receive vendor deliveries, keep inventory, and make distributions from this location. They have approximately \$175,000 worth of supplies in inventory.

Their storeroom has insufficient storage capacity, an inefficient layout, and inadequate security. High-risk items, (e.g., pharmaceuticals and syringes) are kept in locked cabinets, but access is not sufficiently controlled.

Household & Uniform Supply – The Household/Uniforms Supply section has 3 FTEs. Operations consist of two storerooms at the headquarters on Vermont Ave., and a warehouse on Park Road. They have approximately \$200,000 in inventory. Deliveries are received and distributed from both locations.

There are many problems with the Supply function:

- Storage capacity at Vermont Avenue is extremely limited. Some supplies are being stored on one of the back stairwell vestibules. (Would this be permitted in an inspection by the Prevention Division?)
- Security at the storage areas is almost non-existent. Security measures and inventory control is minimal to non-existent in both supply sections. Often the employees are out making deliveries, leaving the storage areas vulnerable.
- The primary facility, the warehouse on Park Road, is an old fire station. The facility is in total disrepair, dirty, and rodent infested. Theft is a major concern at the warehouse, due to the location and physical condition of the structure. A large number of items in the warehouse show signs of both rodent and insect infestation.
- The physical layout of the storage area is an impediment to access control.
- They have an old antiquated DOS-based computer inventory system. The system is not accurate or reliable, and gives very little useful information.
- They do not have a formalized inventory system. The current inventory consists of paper notes and the memory of their employees. Based on our inspection of the facilities, and employee interviews, we are concerned that there is a significant amount of shrinkage and spoilage in the supply operations. However, without an inventory system, those findings could not be quantified and/or validated.
- Neither supply section takes advantage of sole-source and/or just-in-time contracts.
- No efforts have been made to outsource any of their supply needs.
- Office supplies are ordered independent of any city-wide group purchase discount.

- Electronic ordering is non-existent, both to vendors, and from the supply customers.
- All transactions are done by paper (i.e., forms, letters, purchase orders). Medical supplies are distributed after a supply technician accomplishes a fiscal count of the customer's inventory, and replenishes those stocks that have dropped below preset stock levels.
- The problems in these operations have resulted in firefighters being forced to purchase their own uniforms and protective gear such as gloves and boots due to delays in procurement.

Research and Development

This position had been vacant and only recently was filled. The "R&D" shop is somewhat of a misnomer. It includes planning for the department, stations and other facilities maintenance, medical services for the Department personnel, and grant application.

Many facilities are in terrible conditions, as discussed under the Firefighter, Training, and Property and Supply sections above.

This is an important function in the department that needs to get up a head of steam.

Facilities Maintenance – The poor facility condition concern was evident in visits to many stations. To put it simply, the facilities are not being maintained. There were many examples found even in the limited time of this study phase:

- Roof leaks have not been repaired (some, e.g., Station #18, are five years waiting).
- Station #27 has a sewage back-up.
- Air conditioning systems in most stations don't work
- Employees have to purchase station supplies
- Most repairs are done by station personnel
- Station #10 personnel get parking tickets (at shift change they have to park in alley because of insufficient parking on site).

- No security fences – existing ones not repaired
- Firefighters had to repair a toilet back-up at Station #30
- Lights burn out and are not replaced (the energy conservation installation does not work – broken lights are never repaired).
- Exhaust fumes from poorly ventilated apparatus bays cause health problems. Some stations are very old and do not have provision to exhaust diesel fumes outside of the building – a serious, long-term health hazard.
- Firefighters bring in their own tools and appliances; (e.g., saws, entry saws, batteries).
- At Station #22:
 - Floors cracking with holes.
 - Bay door inoperative (three years).
 - Radio base dispatch unit broken (6 months).
 - Roof has leaked for three years.
 - Dorms have an open bay, despite female firefighter presence – no cubicles.
- At Station #16:
 - Holes in ceiling
 - Station lights not repaired
- At Station #15:
 - Broken lights
 - Firefighters painted station with their own money
 - Rear wall in parking lot ready to collapse

Another problem is the service contract with DPW for facilities maintenance, which is not cost-effective. Prices are exorbitant. Quality of work is poor. DPW charged FEMS \$10,000 for “work” on a heater/boiler. Fire contends it was only an inspection. DPW levied charges of \$86,000 of which Fire could account for only \$40,000. No itemization or invoice detailing cost for services was rendered. Further examples of high DPW charges are given elsewhere in the report (Chapter 5).

Professional Standards

A battalion chief heads this function, which includes safety of department personnel, labor relations, special projects, regulations, and internal investigations. There is inadequate staffing to handle all of its functions. Of greatest concern is the lack of adequate attention to worker safety.

Safety – There is only one safety officer attempting to address all of the safety functions for a department with over 1,600 employees. The DC and Emergency Medical Services Department ranks as one of the largest 150 fire service providers in the country. Smaller departments, such as Metro-Dade (3 safety personnel), Atlanta (3 safety personnel), and Birmingham (3 safety personnel) all provide greater attention and support to their safety function.

Approximately 75 percent of the SCBA bottles in the entire department are not up to date in hydrostatic testing, which is required every three years. This is in violation of OSHA regulations and DOT standards. Some bottles are out of date by several years. On others, the dates and serial numbers have been obliterated and are unreadable. Records are reportedly kept "somewhere in maintenance," but without the serial numbers and dates it becomes impossible to track what is due for testing or replacement. About 75 percent of these SCBA bottles were said to be reaching the end of their maximum service lives within the next year or two, which will require a major capital expenditure to replace them.

Some additional concerns about safety:

- The department has had no written risk management plan, though a draft was being reviewed as this report was written.
- Beyond the initial employee injury report, the safety office has no involvement with injury reports, non-firefighter workman's compensation, accident resolution, employee nutrition/wellness, or return to work.
- The review of accidents for the purpose of corrective or future prevention is not in written policy format.

- The incident command system policy refers to on-scene incident safety functions but does not train or specifically identify functions/duties. At the incident scene anyone from the assigned complement may be assigned the safety responsibilities rather than personnel trained in safety functions.
- Physical fitness training is voluntary, with no structured program in place for the purpose of injury reduction through fitness.
- Personal protection equipment (PPE) has no inventory control system in place and no structured inventory replacement SOP. A significant amount of turnout gear is beyond life expectancy limits, requiring large budgetary replacement expenditures to catch up.
- PPE decontamination and cleaning procedures are not consistent for maintaining an inventory. If a company's gear is contaminated at an incident, the department has no inventory to provide temporary replacements.
- A \$50K per year contract is in the process of being implemented to clean firefighter turnout gear. This practice should be reviewed regularly. Cleaning cannot be accomplished in-house with commercial washers because of EPA wastewater runoff restrictions.
- The safety office has no functional involvement in infectious/disease control policy follow-up. There seemed to be limited knowledge of airborne/blood borne pathogen concerns. (OSHA mandates yearly training for all first responders.)
- The Department does not have a centralized coordinating point for job injuries, rehabilitation, light/limited duty, etc. No written policy exists to provide for the productive use of firefighters who can return to limited duty, but not full-duty due to injuries.
- The motor vehicle accident policy needs to be revised.
 - There is inconsistent application of discipline
 - Some personnel are given a re-training/certification course, some get disciplinary actions. The judgment is made by the Accident Review Board, absent of guidelines. The Review board has no policy directions (though there is a proposed draft).

Personnel Performance Evaluation Procedures – The system of measuring performance of firefighters is outdated and inconsistent. It is not objective, and does not have clearly delineated standards. Evaluations are given annually to firefighters for their first three years of employment. They are administered every other year for the next six years, and one five years afterward, with no evaluations past fourteen years unless personnel get promoted.

- There is a draft proposal for evaluating the ranks of Battalion Chief against measurable standards, but is not yet adopted. Holding Battalion Chief more accountable is a key to improving accountability in all ranks below them.
- Personnel responsibilities within the department are scattered and should be centralized.
- There is no “customer-focused” training or orientation for new/incumbent employees, resulting in negative department/citizen interactions. This causes personnel problems, litigation and an unhealthy organization.
- The lack of personnel action (disciplinary) training for supervisors including sergeants, lieutenants, and captains, results in inconsistency of application and action not being sustained at appeal process. Areas for focus are:
 - Collective bargaining agreements
 - District and department personnel regulations
 - DC regulations-adopted in 1991 receives amendments, but needs overview with focus on police and fire inclusion.
 - MOUs outside of the DC personnel regulations govern fire actions and have not been updated since 1988.
- Morale among clerical/support staff is down as a result of above-mentioned conditions. Work load demand, resource allocation, outdated technology, etc.

Labor Relations – There are three separate unions representing the firefighters, communications workers, and EMS personnel. At the present time there seems to be good communications and relations with the IAFF local, and what appears to be a healthy

exchange of information. We were given outstanding cooperation. That does not mean everyone will agree on solutions to the problems, but there was healthy dialogue, and on most of the large issues facing the department, good consensus as to what were the issues.

Some problem areas:

- Labor bargaining agreements need to be reviewed. The current set of multiple documents inhibits consistent policy applications.
- Firefighters are governed by one agreement; EMS governed by a different agreement; civilian/support governed by a third agreement.
- Grievance procedures present the same problem, in that there are multiple options and procedures the department has to comply with.
- The Department's average annual case totals for discipline seem high relative to other departments. There is an average of 270 disciplinary actions and grievances annually. Carryover cases increase the total of open to about 330-350, which creates a record management backlog, too.
- Workman's compensation cases linger in limbo too long without resolution/settlement, resulting in line personnel shortages and excessive overtime.
- Workman's compensation cases are not included in relief factor computations resulting in an inaccurate relief factor coefficient.

Fleet Maintenance

The Fleet Maintenance division is one of the major problem areas in the department. It is responsible for maintenance of all vehicles and equipment, and purchases equipment and supplies. (Some of the problems as they affect Operations were discussed in the Firefighting chapter.) This shop has been hamstrung by several problems:

- Very high workload of repairs, stemming from the very heavy call load per unit, the conditions of the streets, high vehicle accident rates and lack of adequate preventative maintenance.

- City procurement policies that caused inordinate delays for even simple repairs. (Emergency spending authority was given just in June, 1997 to help break the quagmire.)
- Inadequate number and caliber of the mechanics.
- High absenteeism rates (sick leave, AWOL) reduces the available mechanic staff.
- The PDs for shop mechanics were written in the 1960s, and do not have the detail and technical requirements required to recruit qualified personnel for vehicles with modern technology.

All of these need to be and can be improved. In addition, there are several other problems:

- Scarce resources (personnel, space, and inventory) are being used to maintain administrative vehicles. These consist of compact cars and passenger mini-vans.
 - The passenger vehicles are purchased versus leasing; purchasing requires capital investment, and the vehicles tend to remain in service longer periods of time. Leased vehicles can be replaced every three years, maintenance is included, and less initial capital is required.
 - Priority maintenance is given to the emergency response vehicles, and properly so. Administrative vehicles can remain in the shop for long periods of time awaiting maintenance.
- The Fleet's supply storeroom has minimal security and no inventory management system
 - Security involves a series of locked rooms, with items posing a high risk for theft, kept behind locked doors.
 - There is no electronic automation of supply inventory, and very inadequate manual system in place.
 - Shrinkage is a significant problem; missing parts delay repair of both administrative and emergency response vehicles.

- There is no scheduled annual testing of apparatus in place. There is a fear that testing for compliance will result in apparatus failure. No ladder units are annually tested per NFPA standards, and no funds are available. This is a flagrant violation of national safety standards. In 1995, one-half of the department's complement of (16) first line and (5) reserve ladder units at the time were out of service due to axles, transmissions, accidents, parts unavailable.
- Fleet management attempts to follow the Department of Transportation's trucking industry out-of-service criteria, but these criteria are too demanding for an aging, high mileage fleet, and are impossible to implement due to having no reserve apparatus, non-funding of maintenance equipment replacement plan.
- There has been until very recently no officially adopted preventive maintenance program in place, due to:
 - Inadequate funding
 - Difficulty in obtaining parts – no funds
 - Mechanics inadequately trained to work on the present aging/high mileage fleet.
 - System demand is at the 80 percent level for apparatus, while department's fleet maintenance capabilities can only support a 40 percent to 50 percent operation.
- The scheduled preventive maintenance program cannot predict how long a vehicle will be out of service, because:
 - The initial maintenance work often results in discovery of major mechanical needs.
 - Age and high mileage on apparatus results in high frequency of repair needs.
 - Lack of resources.
- Preventive maintenance therefore often takes a unit out of service for an unknown period of time, increasing the reluctance to bring a unit in for maintenance.
- No standard checklist for Preventive Maintenance Program.
- Attempts to hold the mechanic work force accountable have been ineffective due to:

- No orientation and in-service training for maintenance employees on DC/department rules and regulations.
 - Shop mechanics and maintenance personnel governed by a different system of discipline.
 - Fleet Maintenance director (a fire suppression battalion chief) has only been in his present position approximately 1½ years and has not acclimated to managing under DC civilian personnel regulations.
- Present fleet of fire apparatus, because of non-standardized units, require high technological skills in the following areas:
 - Pumps (different manufacturers – Hale, Waterous, etc.)
 - Transmissions, engines, drive power trains, etc.

Mechanics are able to perform preventive maintenance and some major repairs on ambulance units but are inadequate on the larger high-tech fire apparatus (pumpers, ladders, squads, etc.)
- Because of fire apparatus units, parts are not available with a timely turn around, (e.g., they are waiting on Ford pumper parts for units that are no longer in production).
- Purchasing procedures cause lengthy delays because of bureaucratic approval levels.
 - Typically 55 or more days to complete a request.
 - Anything over \$2,500 must be processed (this may have changed recently with new emergency authority).
 - No open purchase ability to obtain parts.
- Ambulance units receive priority, and therefore the bulk of maintenance fund allocations, which are under-funded in the appropriations.
- A private/public partnership for fire apparatus like the one for ambulances might be highly desirable. The department has the ability to purchase ambulances off the GSA bid list. The Ford Motor Company was awarded the contract, and provides excellent support:
 - Ford provides free training to department mechanics
 - Ford also supplies automobiles to department

- Ford's warranty (36-month/36,000 mile) is often serviced and honored past time limits in an effort to retain market.
- It would be highly desirable to seek a public/private partnership such as the Ford ambulance/auto relationship for the fire apparatus.

Fleet maintenance problems affecting operations are discussed in more detail in several other chapters in this report.

Compliance

The Compliance Unit in the Services Bureau monitors the Department's disciplinary process. This unit's staff is supposed to watch proper form format and reporting of disciplinary action time frames. At present there are in effect two separate disciplinary systems, one pertaining to uniformed personnel and the other to EMS and communications personnel. Come mid-October, one system will be in place for all uniformed personnel, fire and EMS, as well as civilian employees. Both will come under the same set of guidelines and requirements.